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Water Year 1983

(U.S.) Geological Survey, Richmond, VA

Prepared for

Corps of Engineers, Washington, DC

May 84

U.S. Department of Commerce
National Technical Information Service
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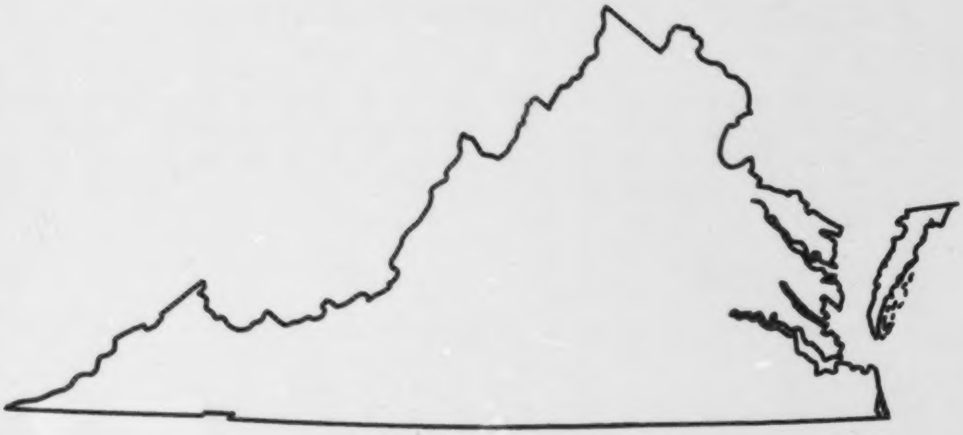
U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

Water Resources Data Virginia

Water Year 1983



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT VA-83-1
Prepared in cooperation with the State of Virginia
and with other agencies

REPRODUCED BY
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U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

CALENDAR FOR WATER YEAR 1983

1982

OCTOBER

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Water Resources Data Virginia

Water Year 1983

by Byron J. Prugh, Jr., Fred J. Easton, and Dennis D. Lynch

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT VA-83-1
Prepared in cooperation with the State of Virginia
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

WILLIAM P. CLARK, Secretary

GEOLOGICAL SURVEY
Dallas L. Peck, Director

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Richmond, Virginia 23220

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Suite 210, 1936 Arlington Blvd.
Charlottesville, Virginia 22903

1984

PREFACE

The annual hydrologic data report of Virginia is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey and the Virginia State Water Control Board who collected, compiled, analyzed, verified, and organized the data. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following offices contributed significantly to the preparation and completion of this report:

U.S. Geological Survey, Richmond, VA
U.S. Geological Survey, Marion, VA
U.S. Geological Survey, Charlottesville, VA
Virginia State Water Control Board, Charlottesville, VA

This report was prepared in cooperation with the State of Virginia and with other agencies under the general supervision of Herbert J. Freiberger, Chief of the Mid-Atlantic District, and Gary S. Anderson, Chief, Virginia Office.

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16. Abstract (Limit: 200 words)

Water resources data for the 1983 water year for Virginia consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains records for water discharge at 196 gaging stations; stage only at 1 gaging station; stage and contents at 10 lakes and reservoirs; water quality at 47 gaging stations and 2 wells; and water levels at 60 observation wells. Also included are data for 77 crest-stage partial-record stations. Locations of these sites are shown on Figures 5 and 6. Additional water data were collected at various sites not involved in the systematic data-collection program. Discharge measurements were made at 220 low-flow partial-record stations. Miscellaneous data were collected at 215 measuring sites and 51 water-quality sampling sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Virginia.

17. Document Analysis a. Descriptors

*Virginia, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.

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GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

[Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (p) pesticides, (t) daily water temperature, (s) sediment, (e) elevation, gage heights, or contents]

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WATER RESOURCES DATA FOR VIRGINIA, 1983

INTRODUCTION

Water resources data for the 1983 water year for Virginia consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains records for water discharge at 196 gaging stations; stage only at 1 gaging station; stage and contents at 10 lakes and reservoirs; water quality at 47 gaging stations and 2 wells; and water levels at 60 observation wells. Also included are data for 77 crest-stage partial-record stations. Locations of these sites are shown on figures 5 and 6. Additional water data were collected at various sites not involved in the systematic data-collection program. Discharge measurements were made at 220 low-flow partial-record stations. Miscellaneous data were collected at 215 measuring sites and 51 water-quality sampling sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Virginia.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report VA-83-1." These water-data reports are for sale, in paper copy or in microfiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the office chief at the address given on the back of the title page or by telephone (804) 771-2427.

COOPERATION

The U.S. Geological Survey and organizations of the State of Virginia have had cooperative agreements for the systematic collection of streamflow records since 1925, for ground-water levels from 1931 to 1957 and since 1967, and for water-quality records from 1944 to 1957 and since 1967. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Virginia State Water Control Board, Richard N. Burton, executive director.
Virginia Department of Highways and Transportation, Harold C. King, commissioner.
City of Alexandria, Douglas Harman, city manager.
City of Newport News, C. C. Crowder, director, Department of Public Utilities.
City of Roanoke, Kit B. Kiser, Director, Utilities and Operations.
City of Staunton, R. Gene McCombs, city manager.
Southeastern Public Service Authority, Durwood S. Curling, executive director.
James City County, Wayland Bass, director, Department of Public Works.
University of Virginia, Dr. James N. Galloway.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 60 gaging stations and 4 water-quality stations published in this report.

Under a cooperative agreement covering the Tennessee River basin, the Tennessee Valley Authority furnished financial assistance for the operation of 3 gaging stations, the records for which are published herein.

Assistance was also furnished by the Water Quality Office, Environmental Protection Agency.

The Appalachian Power Company and the City of Radford aided in collecting records.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

The 1983 water year continued the trend established in 1982 of consecutively larger annual flows on most streams in the State. Exceptions to the general trend were seen in the Big Sandy, upper Holston, and lower Roanoke River basins where average annual flows were slightly below normal and in several locations in the New River and Chowan River basins where average flows were in the upper 25 percent of historical annual flows.

The 1983 water year began with below-normal flows in the east and north and above-normal flows in the western and southwestern parts of the State. Flows declined during the late fall and most streamflows were below normal by early winter. The pattern shifted in the spring with almost the entire State having above-normal flows except in the extreme southwest. Numerous stations set records for April monthly mean flows. The following table presents monthly mean flows for April 1983 for nine selected locations representative of five major basins.

Gaging Station	Basin	Mean flow April 1983 (cfs)	Rank	Year record high occurred	Length of record (years)
SF Shenandoah River at Front Royal, VA	Potomac	6,510	2nd	1901	60
Rapidan River near Culpeper, VA	Rappahannock	2,420	2nd	1937	53
James River at Buchanan, VA	James	9,470	1st	1983	85
Rivanna River at Palmyra, VA	James	3,550	2nd	1937	50
Appomattox River at Farmville, VA	James	1,150	1st	1983	57
Blackwater River near Franklin, VA	Chowan	2,000	1st	1983	39
Nottoway River near Stony Creek, VA	Chowan	1,940	2nd	1978	54
Dan River at Danville, VA	Roanoke	6,720	2nd	1958	49
Roanoke River at Randolph, VA	Roanoke	12,330	1st	1983	42

Following high runoff in April, flows progressively diminished at most sites for the remainder of the water year. Some near-record low flows were observed in the Chowan River basin during August and September.

The dry fall and summer were more than offset by the exceptionally wet spring with the net result of above-normal average flows for the 1983 water year. The following table shows annual flow conditions that existed at six representative stations across the State.

Gaging Station	Portion of State	Annual mean flow for 1983 (cfs)	Percent of median annual flow	Length of record (years)
Nottoway River near Stony Creek, VA	Southeast	745	151	54
NF Holston River near Saltville, VA	Southwest	278	94	64
James River at Buchanan, VA	Western	2,690	113	85
Slate River near Arvonia, VA	Central	212	95	57
Rapidan River near Culpeper, VA	Northeast	556	109	53
SF Shenandoah River at Front Royal, VA	Northwest	1,880	132	60

Ground-water levels across the State generally began the water year near normal but declined in the fall and winter in response to below-normal precipitation and streamflows. Due to an exceptionally wet spring, water levels were above normal for this period but the subsequent dry summer caused levels in most locations to decline to near-normal or slightly below-normal conditions at the end of the water year. Water levels in index wells in the northern half of Virginia were 1 to 2 feet below normal, while those in the southern half were 0.5 foot above normal by the end of the water year.

Water levels in index wells in Rockingham and Louisa Counties rose above normal in March and May of 1983, respectively, for the first time since the summer of 1980. The Brinkley well in Suffolk, the McGaheysville well in Rockingham County, and the Christiansburg well in Montgomery County set new record monthend highs for the month of April. No record lows were established at any index well.

Dissolved-solids concentrations at most stations during the 1983 water year were near normal. Specific conductance, used as an indicator of dissolved-solids concentration, averaged about 97 percent of the mean for the previous ten years for the three stations in the table below.

Water temperatures throughout the State were also normal for this period. The Rappahannock River near Remington averaged 15°C, 1°C higher than the mean for the previous ten years. At James River at Buchanan and New River at Glen Lyn, water temperatures were 14.5°C and 15.0°C, respectively, the same as the ten-year average for these stations. Trends in discharge, annual suspended-sediment load, specific conductance (a measure of dissolved-solids concentration) and water temperature are given in the following table.

	Mean discharge (cfs)		Annual suspended-sediment load (tons)		Mean specific conductance (umhos/cm)		Mean water temperature (°C)	
Gaging Station	Previous 10 years	1983	Previous 10 years	1983	Previous 10 years	1983	Previous 10 years	1983
Rappahannock River Remington, VA	782	809	140,000	91,300	67	72	14.0	15.0
James River at Buchanan, VA	2,690	2,690	-	-	304	254	14.5	14.5
New River at Glen Lyn, VA	5,560	6,060	-	-	142	141	15.0	15.0

The suspended-sediment load at Rappahannock River at Remington was about 91,000 tons during this period or about 65 percent of the mean for the previous 10 years. Seventy-three percent of that load (67,000 tons) came during the extremely wet month of April.

Concentrations of trace metals were nearly always far below critical concentrations established for various uses. However, concentrations of dissolved iron and manganese occasionally reached high levels in several rivers, especially those in the southeastern part of the State where summer streamflows were quite low. The dissolved-iron concentration was measured at 1,500 micrograms per liter in the Blackwater River near Franklin and dissolved-manganese concentrations were observed as high as 590 micrograms per liter in the Appomattox River at Matoaca.

RECORDS COLLECTED BY THE STATE OF VIRGINIA

In addition to data collected by the U.S. Geological Survey, there are included herein records for 100 gaging stations and 19 index wells operated by the Virginia State Water Control Board. These records are published as furnished and are acknowledged in the "COOPERATION" paragraph of each individual station. The State Water Control Board is under the direction of Richard N. Burton, executive director. Published material for the gaging-station records and the ground-water wells is supplied, respectively, through the Bureau of Surveillance and Field Studies, Raymond E. Bowles, director, and the Bureau of Water Control Management, Dale F. Jones, director.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting inch-pound units to International System of Units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved is that material in a representative water sample which passes through a 0.45 um membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (ug/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L) Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.0	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg $C/(m^2.time)$ for periphyton and macrophytes and mg $C/(m^3.time)$] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg $O_2/(m^2.time)$ for periphyton and macrophytes and mg $O_2/(m^3.time)$] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material refers to the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is the quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample.

To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) *dissolved* and (2) *total recoverable* concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) *dissolved* and (2) *total* concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata* is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	*Hexageria*
Species	*Hexagenia limbata*

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total refers to the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material refers to the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual basic-data reports.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation in a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 03041000, which appears just to the left of the station name, includes the 2-digit part number "03" plus the 6-digit downstream order number "041000".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude and the next 7 digits denote degrees, minutes, and seconds of longitude of a point believed to represent the location of the site; the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph. See figure 1.

A second well-numbering system used in Virginia utilizes 7 1/2-minute quadrangles within the State. The quadrangles are numbered from west to east, and lettered from south to north, omitting the letters "I" and "O." The designation for each quadrangle is determined by the method "Read Right, Up." Wells are numbered serially within each quadrangle. This local well number is shown immediately after the primary well number.

Well records furnished by the State of Virginia also include the well number that is based on an indexing system used by the State Water Control Board.

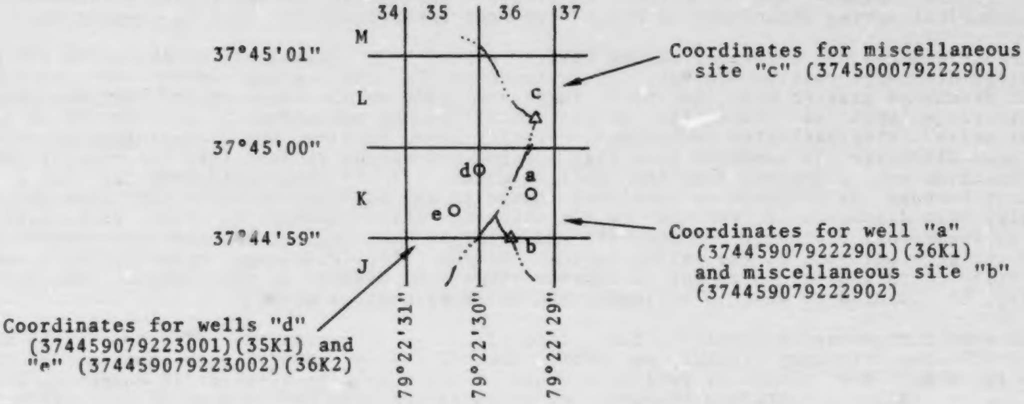
34
35
36
37
M
L
K
J
37°45'01"
37°45'00"
37°44'59"
c
d
a
e
b
79°22'31"
79°22'30"
79°22'29"
Coordinates for miscellaneous site "c" (374500079222901)
Coordinates for well "a" (374459079222901)(36K1) and miscellaneous site "b" (374459079222902)
Coordinates for wells "d" (374459079223001)(35K1) and "e" (374459079223002)(36K2)

Figure 1. System for numbering wells and miscellaneous sites

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in *U.S. Geological Survey Techniques of Water Resources Investigations*, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables; then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by hydrologists and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations, there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revisions, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 6.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

Those records which have been computed and furnished by the Virginia State Water Control Board are identified under "COOPERATION."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following "EXTREMES FOR THE CURRENT YEAR," for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharges are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation, or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the offices whose addresses are given on the back of the title page of this report. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22902, maintains an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

Access to WATSTORE Data

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimum fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's district offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S.G.S. Virginia office whose address is given on the back of the title page of this report.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Revisions

If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of the U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number and (2) a local number that is provided for local needs (see figure 1). The 15-digit number is an identifier, formed initially from the latitude and longitude of a point believed to represent the location of the site. This site identification number, once assigned, is a pure number and has no locational significance. It is used primarily as an internal control number within the computer files.

Measurements are made in many types of wells under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will insure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum of 1929 (NGVD) or land-surface datum (lsd). National Geodetic Vertical Datum of 1929 is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above National Geodetic Vertical Datum of 1929 is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and at the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett Street, Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

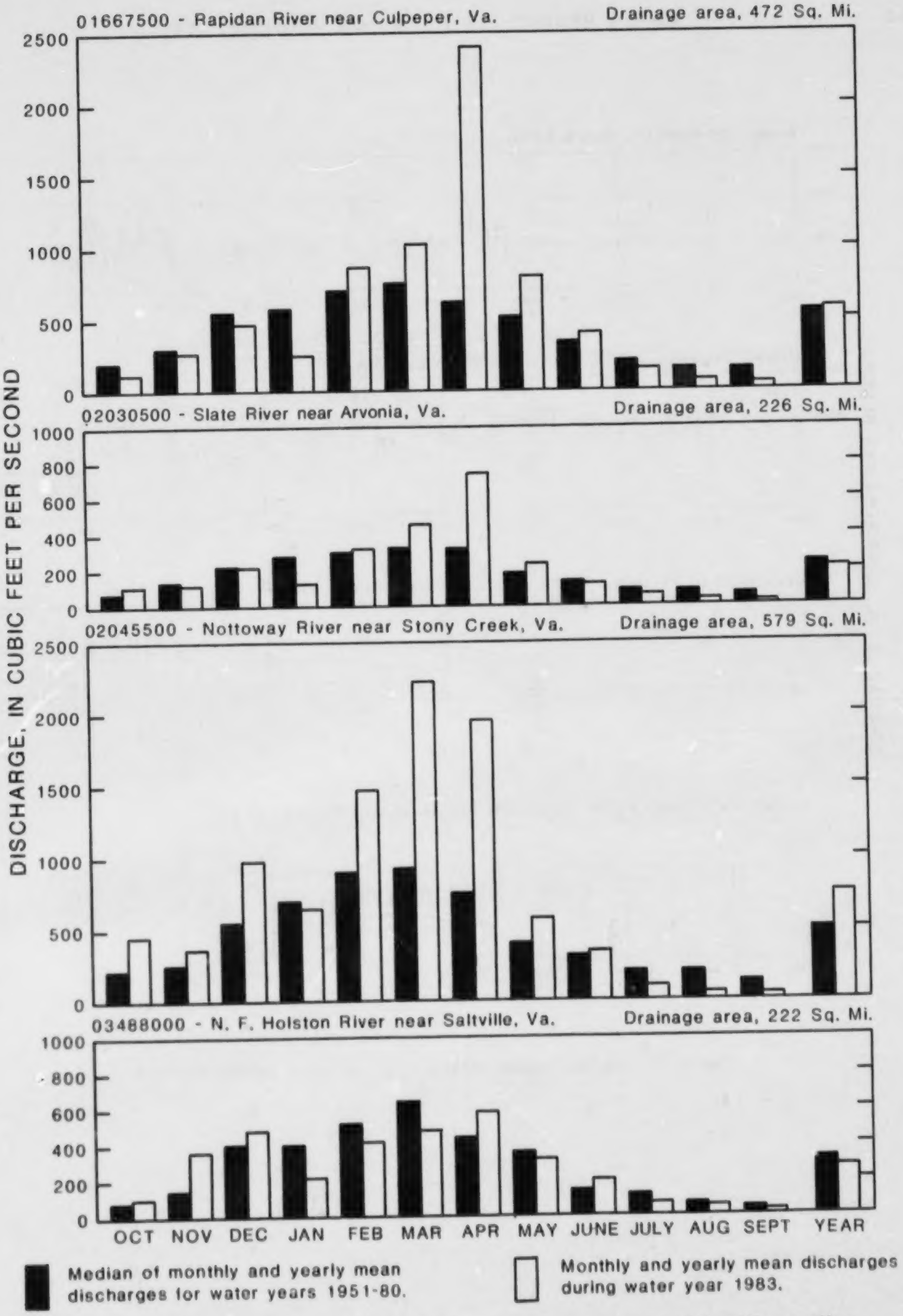

Figure 2. -- Discharge during 1983 water year compared with median discharge for period 1951-80 for four representative gaging stations.

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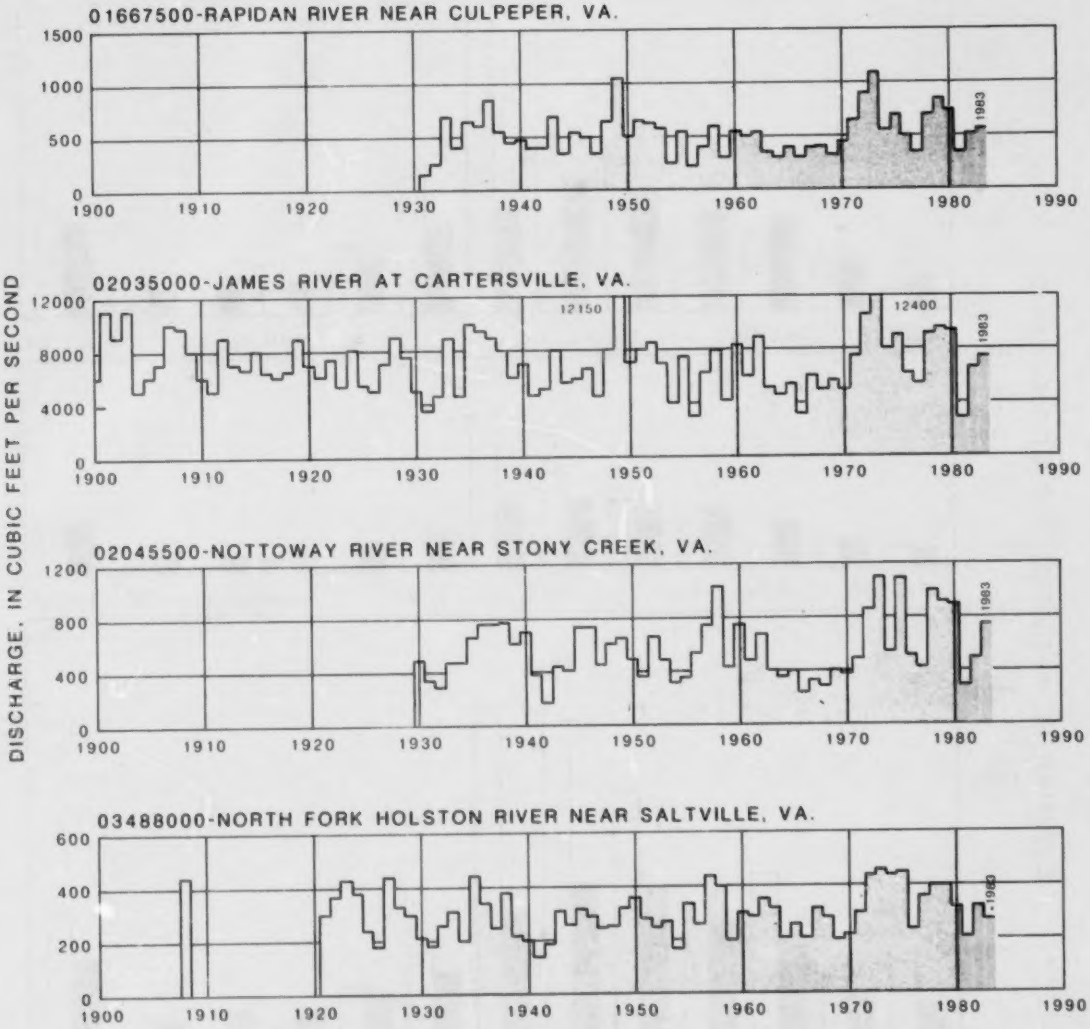
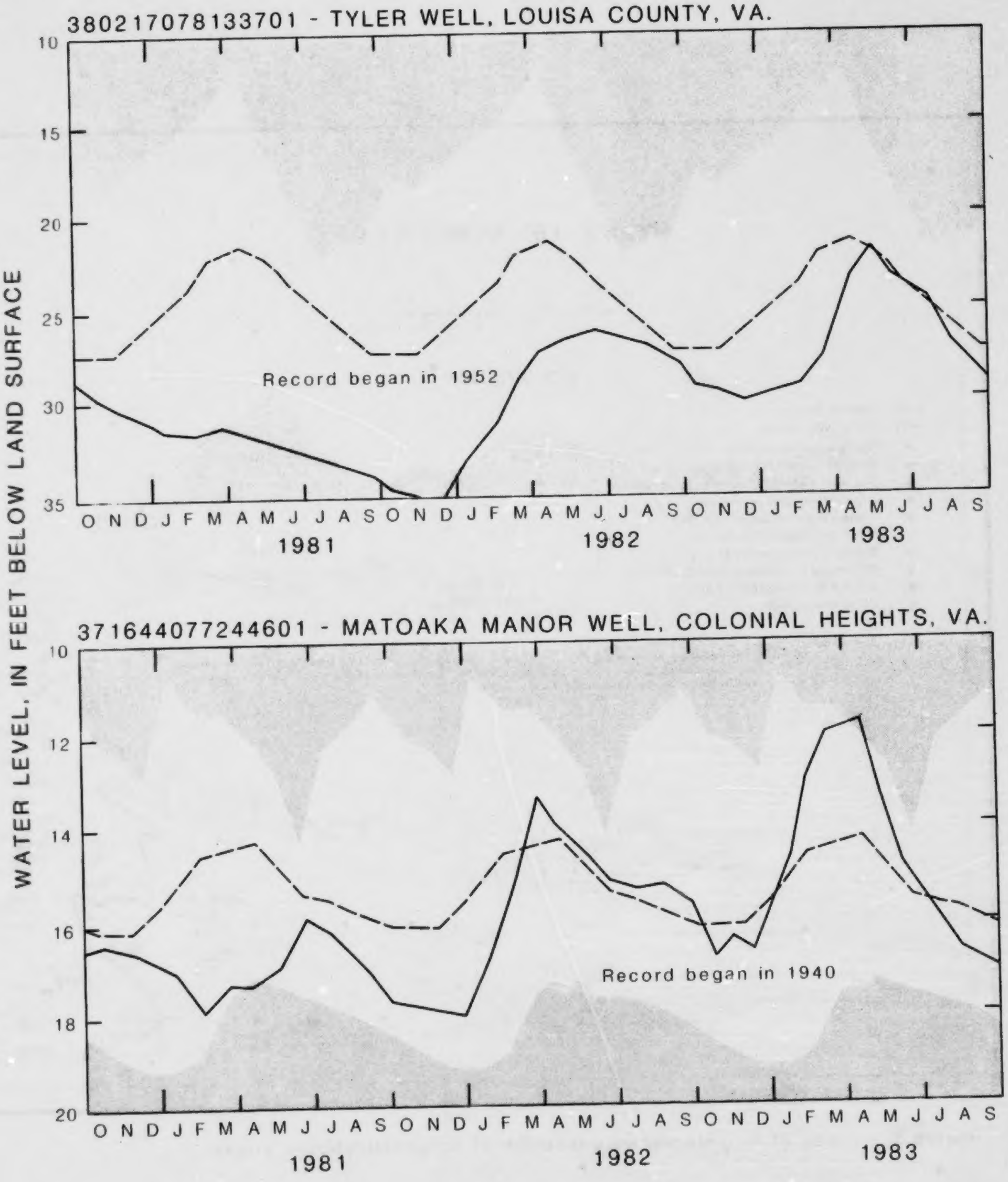


Figure 3. – Annual mean discharge at selected gaging stations.


380217078133701 - TYLER WELL, LOUISA COUNTY, VA.

371644077244601 - MATOAKA MANOR WELL, COLONIAL HEIGHTS, VA.

UNSHADED AREA	Range between highest and lowest recorded monthly water levels, prior to the indicated year.
SOLID LINE	Near monthend water level for the indicated year.
DASHED LINE	Average of the recorded monthly water levels, prior to the indicated year.

Figure 4. - Monthly ground-water levels at key observation wells.

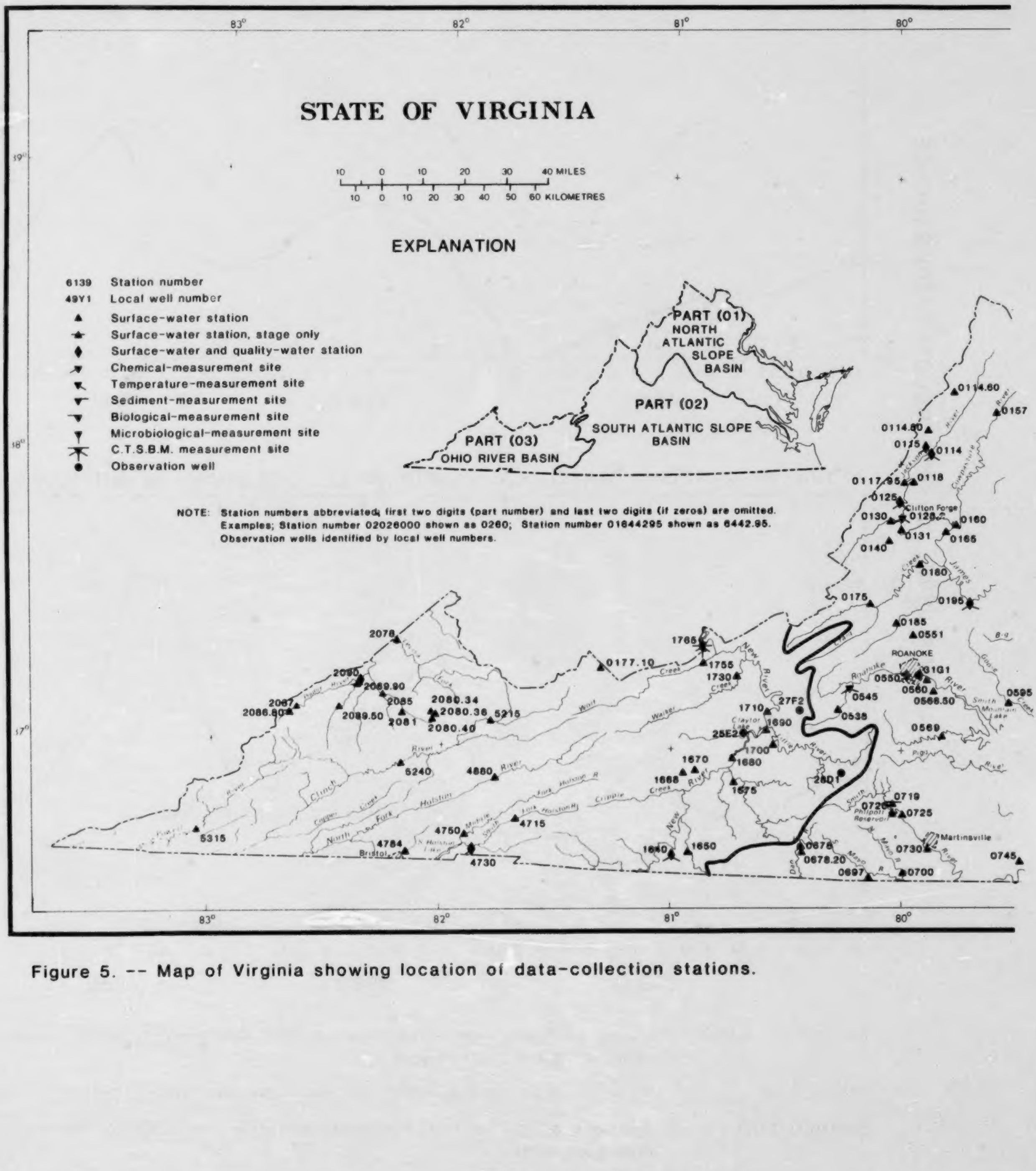
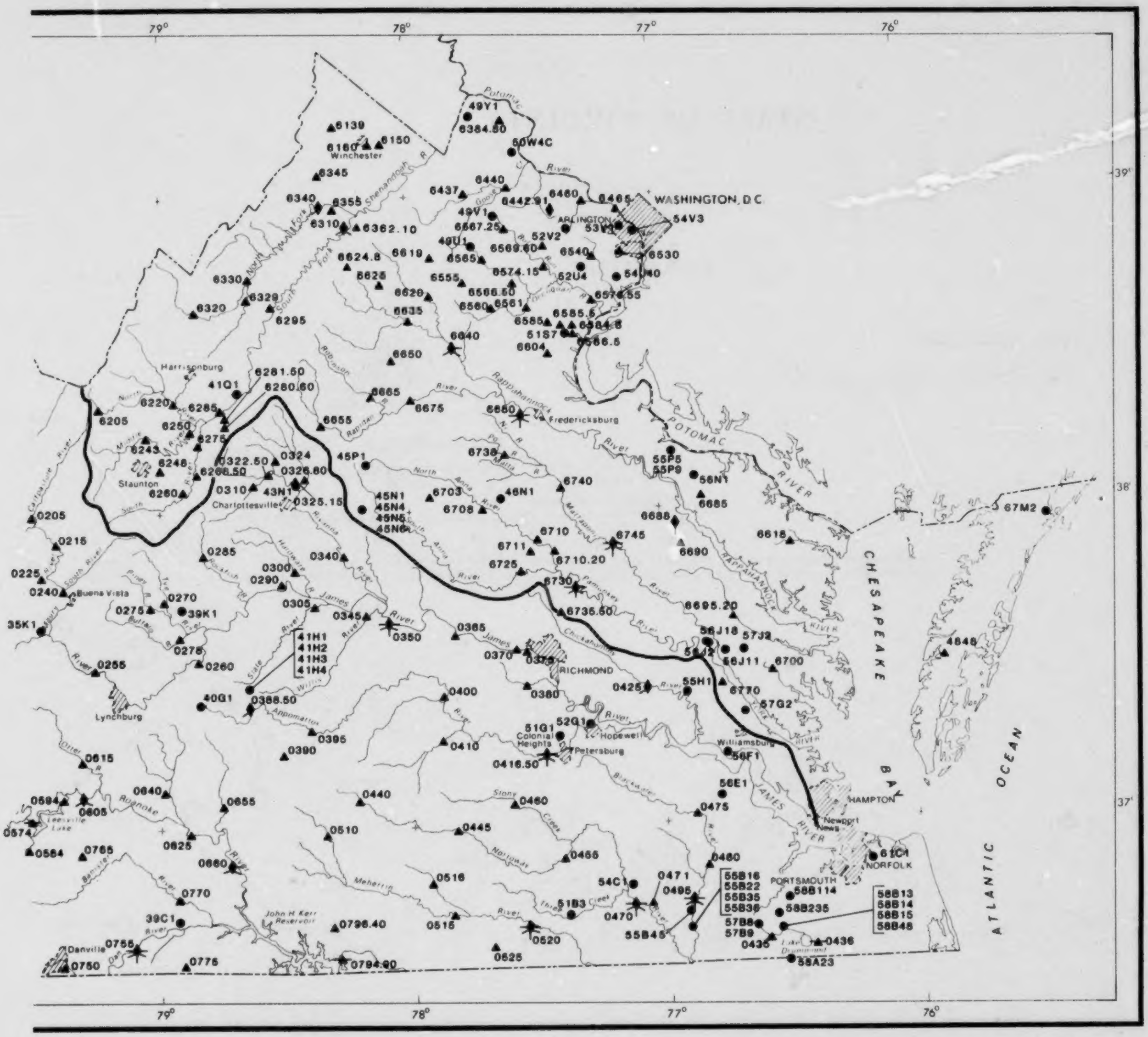
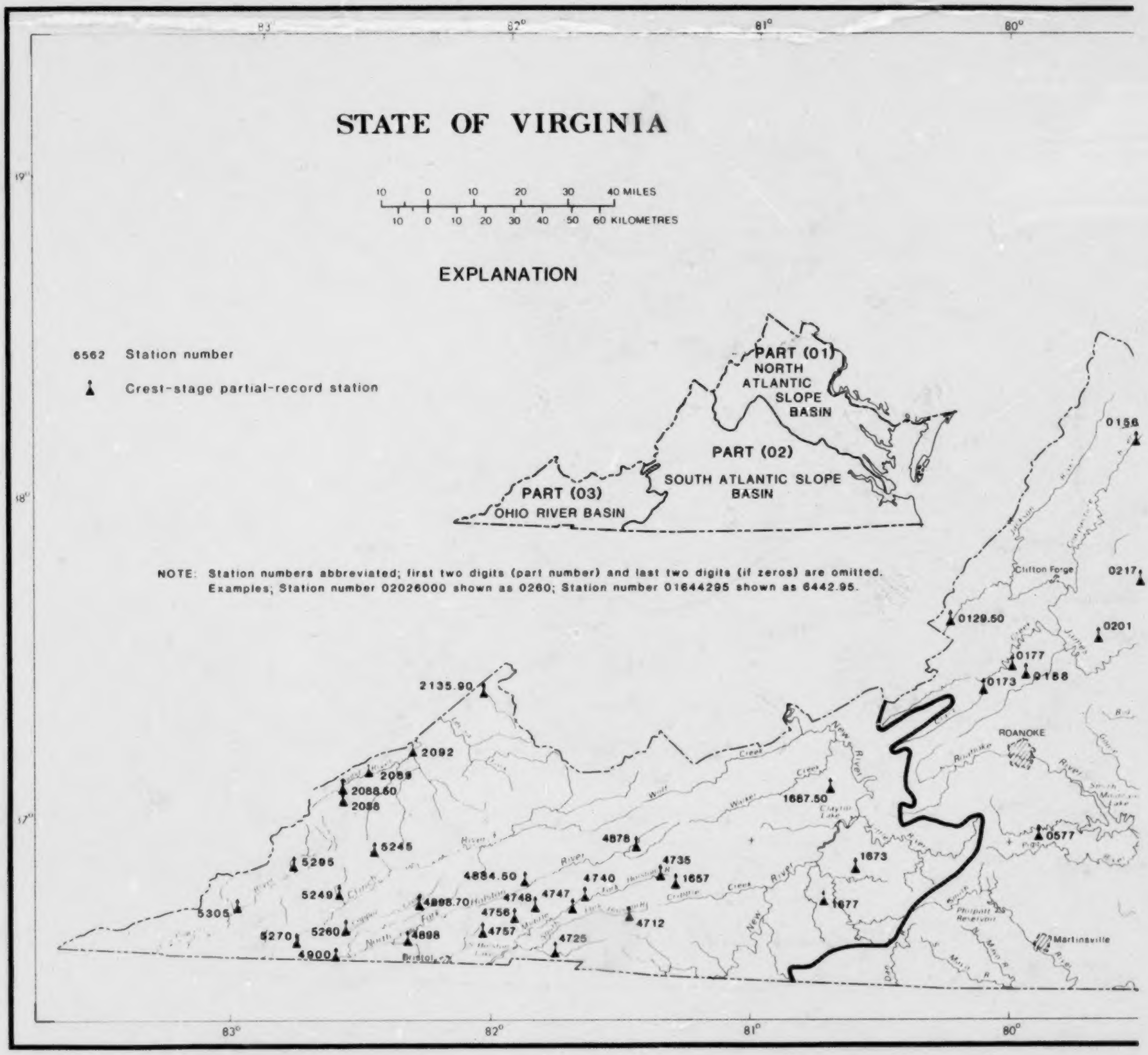

STATE OF VIRGINIA
10 0 10 20 30 40 MILES
10 0 10 20 30 40 50 60 KILOMETRES
EXPLANATION
6139 Station number
49Y1 Local well number
▲ Surface-water station
Surface-water station, stage only
♦ Surface-water and quality-water station
Chemical-measurement site
Temperature-measurement site
Sediment-measurement site
Biological-measurement site
Microbiological-measurement site
C.T.S.B.M. measurement site
● Observation well
PART (01) NORTH ATLANTIC SLOPE BASIN
PART (02) SOUTH ATLANTIC SLOPE BASIN
PART (03) OHIO RIVER BASIN
NOTE: Station numbers abbreviated; first two digits (part number) and last two digits (if zeros) are omitted. Examples; Station number 02026000 shown as 0260; Station number 01644295 shown as 6442.95. Observation wells identified by local well numbers.
83°
82°
81°
80°
ROANOKE
Clifton Forge
Martinsville
Bristol
Claytor Lake
Philpott Reservoir
Smith Mountain Lake
2076
2090
2089.90
2087
2086.80
2085
2089.50
2081
2080.34
2080.36
2080.40
5215
5240
4880
4750
4784
4730
4715
5315
0177.10
1765
1755
1730
1710
27F2
1690
25E2
1700
1680
1670
1668
1675
1640
1650
28D1
0114.60
0157
0114.80
0115
0114
0117.95
0118
0125
0130
0128
0160
0131
0165
0140
0180
0175
0195
0185
0551
0550
0560
0566.50
0545
0538
0595
0569
0719
0720
0725
0730
0745
0678
0678.20
0697
0700

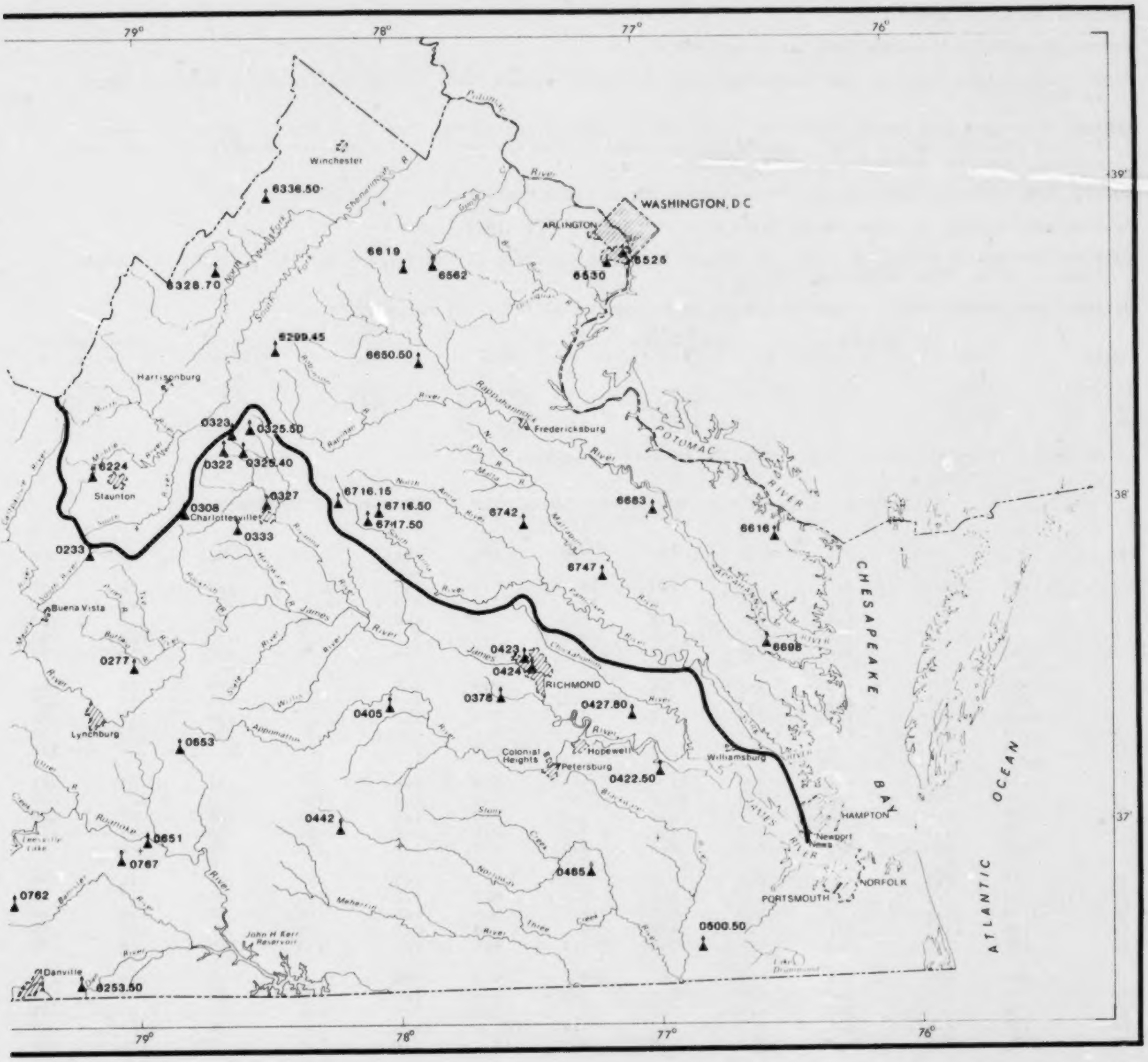
Figure 5. -- Map of Virginia showing location of data-collection stations.


79°
78°
77°
76°
39°
38°
37°
Potomac
49Y1
6384.50
50W4C
6139
6160
6150
Winchester
6345
6340
6355
6310
6362.10
Shenandoah
River
6437
6440
6442.91
6460
6465
WASHINGTON, D.C.
ARLINGTON
49V1
53V3
54V3
6567.25
52V2
6530
49U1
6569.60
6540
6565
6574.15
52U4
54U40
6624.8
6619
6555
6628
6620
6566.50
6560
6561
6575.55
6635
6585
6585.5
6584.8
51S7
6586.5
6604
6330
6329
6320
6295
6640
6650
Harrisonburg
6281.50
41Q1
6280.60
6665
6675
6220
6205
6285
6250
6275
6655
6680
Fredericksburg
POTOMAC
RIVER
6243
6248
6322.50
0324
0326.80
45P1
6738
55P5
55P9
56N1
6685
Staunton
6266.50
0310
43N1
6260
Charlottesville
0325.15
45N1
45N4
45N5
45N6
6703
6708
46N1
6740
6688
67M2
6616
6690
6710
6711
6745
6710.20
6725
6730
6735.50
CHESAPEAKE
BAY
0205
0215
0285
0340
0300
0290
0225
0240
Buena Vista
0270
0275
39K1
0305
0345
0350
James
River
35K1
0275
41H1
41H2
41H3
41H4
0365
0370
0375
RICHMOND
0425
55H1
56J18
57J2
56J12
56J11
6700
4848
6695.20
0255
0260
40G1
0388.50
0400
0380
6770
57G2
Lynchburg
Appomattox
0395
0390
0410
51G1
Colonial Heights
52G1
Hopewell
Petersburg
0416.50
Williamsburg
56F1
56E1
0615
0640
0655
0440
0460
0475
HAMPTON
Newport News
0594
0605
0574
0584
0765
0625
Roanoke
River
0510
0445
0455
0480
61C1
NORFOLK
PORTSMOUTH
0660
0516
0471
0495
55B16
55B22
55B35
55B36
58B114
58B235
58B13
58B14
58B15
58B48
57B8
57B9
0770
54C1
0470
51B3
55B45
39C1
John H Kerr Reservoir
0796.40
0515
0620
0435
0436
58A23
Danville
0755
0750
0775
0794.90
0625
ATLANTIC
OCEAN


STATE OF VIRGINIA
10 0 10 20 30 40 MILES
10 0 10 20 30 40 50 60 KILOMETRES
EXPLANATION
6562 Station number
Crest-stage partial-record station
PART (01) NORTH ATLANTIC SLOPE BASIN
PART (02) SOUTH ATLANTIC SLOPE BASIN
PART (03) OHIO RIVER BASIN
83°
82°
81°
80°
39°
38°
37°
2135.90
2092
2089
2088.50
2088
5245
5295
5249
5305
5270
5260
4900
4898
4898.70
4884.50
4878
4748
4747
4740
4756
4757
4725
4735
1657
4712
1687.50
1673
1677
0129.50
0177
0173
0188
0201
0217
0156
0577
Clifton Forge
ROANOKE
Martinsville
Bristol
New River
Claytor Lake
Philpott Reservoir
Smith Mountain Lake

NOTE: Station numbers abbreviated; first two digits (part number) and last two digits (if zeros) are omitted. Examples; Station number 02026000 shown as 0260; Station number 01644295 shown as 6442.95.

Figure 6. -- Map of Virginia showing location of crest-stage partial-record stations.


79°
78°
77°
76°
39°
38°
37°
Potomac River
Winchester
6336.50
6328.70
North Fork
South Fork
Shenandoah R
WASHINGTON, D.C.
ARLINGTON
6525
6530
6619
6562
6299.45
6650.50
Harrisonburg
Rappahannock River
Fredericksburg
POTOMAC RIVER
0323
0325.50
0322
0325.40
6224
Staunton
0327
0308
Charlottesville
0333
6716.15
6716.50
6747.50
6742
6683
6616
0233
6747
CHESAPEAKE BAY
Buena Vista
James River
0277
6698
0423
0424
RICHMOND
0378
0427.80
0405
Lynchburg
0653
Appomattox
Colonial Heights
Petersburg
Hopewell
0422.50
Williamsburg
HAMPTON
Newport News
JAMES RIVER
NORFOLK
PORTSMOUTH
0442
Roanoke
0651
0767
0762
0465
Nottoway
Meherrin
Three Creek
John H Kerr Reservoir
0600.50
Danville
6253.50
ATLANTIC OCEAN

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NORTH ATLANTIC SLOPE BASINS

NASSAWADOX CREEK BASIN

01484800 GUY CREEK NEAR NASSAWADOX, VA

LOCATION.--Lat 37°30'08", long 75°52'22", Northampton County, Hydrologic Unit 02080109, on left bank 25 ft upstream from bridge on State Highway 606, 1.9 mi northwest of Nassawadox, and 2.1 mi upstream from mouth.

DRAINAGE AREA.--1.72 mi^2.

PERIOD OF RECORD.--November 1963 to current year.

GAGE.--Water-stage recorder and wooden control. Datum of gage is 11.67 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Nov. 3 to Jan. 5, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--19 years (water years 1965-83), 1.39 ft^3/s, 10.97 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78 ft^3/s July 31, 1979, gage height, 5.28 ft; no flow at times in 1964, 1966, 1981, and 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 11	2200	22	3.11	Apr. 16	1030	25	3.31
Mar. 18	2130	25	3.32	Apr. 24	1945	*28	3.50
Mar. 21	1515	22	3.13	Aug. 23	2345	20	3.03

No flow part of each day Sept. 6-10, 12, result of pumpage.

DISCHARGE. IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	1.1	3.5	2.3	2.1	11	5.0	2.6	1.0	.40	.14	.57
2	.55	1.2	3.0	2.6	2.2	14	3.9	2.3	1.1	.38	.09	.60
3	.48	1.1	1.8	3.0	3.7	6.5	5.4	2.1	.88	.35	.23	.59
4	.48	1.9	1.5	2.7	2.8	4.9	4.2	3.1	.85	.35	.27	.53
5	.43	3.0	1.4	2.6	2.3	4.1	3.4	2.4	.79	.37	.15	.50
6	.43	1.6	2.2	3.2	3.2	3.6	3.9	1.9	.75	.44	.08	.16
7	.43	1.5	1.9	2.7	7.2	6.1	4.4	1.7	.81	.35	.27	.01
8	.38	1.3	1.7	2.3	4.7	15	5.0	1.7	2.0	.34	.17	.02
9	.38	1.1	1.6	2.1	3.6	8.7	4.4	1.5	1.2	.34	.08	.08
10	.33	1.1	1.5	2.9	3.1	7.1	6.1	1.5	.89	.33	.06	.14
11	.33	1.0	7.0	3.9	11	5.6	5.1	1.4	.72	.32	.24	.21
12	.38	.98	8.0	3.0	12	5.0	4.0	1.3	.64	.30	.38	.08
13	.55	2.4	3.5	2.4	6.3	4.2	3.3	1.2	.59	.29	.28	.28
14	.79	1.6	2.3	2.2	7.9	3.8	3.0	1.2	.55	.26	.27	.37
15	.48	3.5	2.4	2.3	9.0	3.5	2.8	1.1	.52	.26	.26	.36
16	.38	2.1	4.0	2.1	5.9	3.0	18	1.3	.52	.24	.14	.31
17	.33	1.9	3.0	1.9	5.1	2.8	8.9	1.2	.49	.22	.07	.29
18	.38	1.8	2.2	1.7	4.6	16	5.9	1.1	.46	.22	.10	.26
19	.38	1.7	2.1	1.6	4.0	16	8.8	1.1	.46	.24	.05	.25
20	.38	1.5	2.2	1.5	3.4	7.0	6.6	2.1	.53	.25	.02	.24
21	.55	1.5	1.9	1.5	3.1	14	4.8	1.9	.94	.25	.09	.38
22	.71	1.4	1.7	1.7	2.9	9.5	3.9	1.8	.64	.21	.06	.59
23	.78	1.3	1.7	4.8	5.5	5.4	3.5	1.7	.51	.19	1.3	.29
24	.79	1.3	1.6	4.2	5.7	4.4	21	1.4	.47	.18	5.1	.30
25	2.7	1.3	1.6	3.2	4.6	3.9	18	1.2	.44	.22	.86	.27
26	2.1	1.3	1.6	2.7	4.1	3.3	8.0	1.7	.42	.31	.67	.26
27	1.6	1.4	1.5	2.4	3.4	3.7	5.4	2.0	.40	.25	.61	.26
28	1.4	1.5	1.5	2.8	3.1	5.4	4.2	1.3	.38	.14	.58	.26
29	1.3	4.0	3.3	2.6	---	4.3	3.3	1.1	.45	.14	.52	.25
30	1.2	2.5	2.9	2.4	---	3.6	2.8	1.0	.44	.13	.47	.33
31	1.1	---	3.0	2.3	---	3.7	---	.98	---	.14	.46	---
TOTAL	23.12	50.88	79.1	79.6	136.5	209.1	187.0	49.88	20.84	8.41	14.07	9.04
MEAN	.75	1.70	2.55	2.57	4.88	6.75	6.23	1.61	.69	.27	.45	.30
MAX	2.7	4.0	8.0	4.8	12	16	21	3.1	2.0	.44	5.1	.60
MIN	.33	.98	1.4	1.5	2.1	2.8	2.8	.98	.38	.13	.02	.01
CFSM	.44	.99	1.48	1.49	2.84	3.92	3.62	.94	.40	.16	.26	.17
IN.	.50	1.10	1.71	1.72	2.95	4.52	4.04	1.08	.45	.18	.30	.20

CAL YR 1982 TOTAL 680.97 MEAN 1.87 MAX 21 MIN .07 CFSM 1.09 IN 14.72
WTR YR 1983 TOTAL 867.54 MEAN 2.38 MAX 21 MIN .01 CFSM 1.38 IN 18.75

01613900 HOGUE CREEK NEAR HAYFIELD, VA

LOCATION.--Lat 39°12'52", long 78°17'18", Frederick County, Hydrologic Unit 02070004, on right bank 15 ft upstream from bridge on State Highway 614, 0.8 mi upstream from Gap Run, and 1.3 mi southeast of Hayfield.

DRAINAGE AREA.--15.0 mi².

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 668.60 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--23 years, 14.8 ft³/s, 13.40 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,760 ft³/s June 22, 1972, gage height, 8.85 ft, from rating curve extended above 870 ft³/s; no flow for part of Sept. 14, 1968, cause unknown.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0100	504	3.58	Apr. 24	1030	*780	4.40
Apr. 3	0030	540	3.70	May 16	1700	534	3.68
Apr. 10	0600	465	3.45				

Minimum discharge, 0.65 ft³/s Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	1.9	5.9	4.0	4.0	17	16	22	8.5	4.2	1.8	1.3
2	1.1	1.9	6.6	3.8	11	15	44	20	7.6	3.6	2.3	1.1
3	1.0	2.2	5.4	3.6	34	13	206	19	7.6	3.1	3.1	1.0
4	1.0	5.9	4.4	3.0	17	12	66	18	7.6	3.1	3.6	.92
5	1.1	4.2	3.8	2.7	11	11	38	16	6.4	3.6	3.4	.92
6	1.2	2.4	3.4	3.0	9.5	11	32	13	6.0	3.4	2.6	.92
7	1.2	1.8	2.9	3.3	9.2	14	49	9.7	6.4	2.8	2.1	.92
8	1.7	1.7	2.9	3.1	8.1	43	84	11	5.3	3.6	1.8	.74
9	1.5	1.7	2.7	3.1	6.8	75	148	11	5.3	2.6	1.8	.74
10	1.4	1.5	2.5	4.6	6.2	44	302	8.9	5.3	2.5	1.6	.74
11	1.5	1.5	2.5	9.5	6.0	31	126	8.1	4.8	2.5	1.8	.74
12	1.7	1.5	2.7	8.1	7.0	23	72	7.6	5.0	2.5	2.0	.83
13	1.9	1.7	2.5	6.6	10	18	48	7.2	4.5	2.5	1.6	1.4
14	2.2	1.9	2.5	5.9	15	16	35	7.2	3.9	1.8	1.6	1.0
15	1.8	1.8	2.5	5.4	20	14	131	14	3.9	1.8	1.6	1.3
16	1.8	1.8	25	4.4	25	12	102	210	4.8	2.0	1.6	1.0
17	1.7	1.8	14	3.8	34	11	62	140	5.6	2.0	1.4	.92
18	1.8	1.8	8.9	3.4	76	86	42	57	4.5	2.0	1.4	.92
19	1.8	1.8	7.2	3.0	80	227	32	32	4.5	2.0	1.4	.92
20	1.8	2.1	6.2	3.0	68	86	26	27	4.5	2.0	1.3	.92
21	1.8	2.4	5.4	3.1	65	82	22	25	108	2.1	1.1	1.6
22	2.2	2.9	4.6	3.4	77	53	19	31	33	2.5	1.3	1.3
23	1.9	3.1	4.6	4.4	72	30	20	37	13	2.1	1.4	1.1
24	1.8	2.7	4.6	5.2	47	22	470	22	8.1	2.1	1.3	1.1
25	2.4	2.4	4.4	4.9	34	17	248	18	6.0	2.1	1.0	1.0
26	3.4	2.2	4.4	4.6	26	13	99	15	5.0	2.1	.92	1.0
27	2.1	2.1	4.6	4.4	20	33	57	12	4.8	2.0	1.0	1.0
28	1.9	3.5	4.9	4.4	17	52	38	11	4.5	2.0	1.3	.92
29	1.8	16	4.6	4.0	---	29	31	11	5.0	2.0	1.1	1.0
30	1.8	6.9	4.4	4.2	---	21	27	9.7	4.2	2.0	.92	1.8
31	1.8	---	4.0	4.4	---	18	---	8.9	---	1.8	1.3	---
TOTAL	53.3	87.1	165.0	134.3	815.8	1149	2692	859.3	303.6	76.4	52.44	31.07
MEAN	1.72	2.90	5.32	4.33	29.1	37.1	89.7	27.7	10.1	2.46	1.69	1.04
MAX	3.4	16	25	9.5	80	227	470	210	108	4.2	3.6	1.8
MIN	1.0	1.5	2.5	2.7	4.0	11	16	7.2	3.9	1.8	.92	.74
CFSM	.12	.19	.36	.29	1.94	2.47	5.98	1.85	.67	.16	.11	.07
IN.	.13	.22	.41	.33	2.02	2.85	6.68	2.13	.75	.19	.13	.08

CAL YR 1982 TOTAL 6127.50 MEAN 16.8 MAX 587 MIN 1.0 CFSM 1.12 IN 15.20
WTR YR 1983 TOTAL 6419.31 MEAN 17.6 MAX 470 MIN .74 CFSM 1.17 IN 15.92

01615000 OPEQUON CREEK NEAR BERRYVILLE, VA

LOCATION.--Lat 39°10'40", long 78°04'20", Frederick County, Hydrologic Unit 02070004, on left bank between the bridges on State Highway 7, 0.2 mi upstream from Abrams Creek, and 5.0 mi west of Berryville.

DRAINAGE AREA.--57.4 mi^2.

PERIOD OF RECORD.--October 1943 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-72-1: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 503.24 ft National Geodetic Vertical Datum of 1929. Prior to July 26, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 41.7 ft^3/s, 9.87 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft^3/s Nov. 13, 1970, gage height, 12.82 ft, from rating curve extended above 4,800 ft^3/s; minimum daily, 0.20 ft^3/s Sept. 12, 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 18.4 ft, discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0400	1430	6.49	Apr. 24	1630	1410	6.45
Apr. 3	0530	911	5.26	May 16	1900	1500	6.64
Apr. 10	0930	*1540	6.74				

Minimum discharge, 3.0 ft^3/s Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	6.5	24	10	14	58	45	49	28	21	9.2	7.4
2	5.0	6.5	33	9.5	27	63	44	44	27	23	9.4	6.4
3	5.0	6.5	24	9.5	152	51	458	42	25	16	9.3	6.1
4	5.0	33	19	8.5	69	41	137	41	26	14	9.2	6.0
5	5.2	44	16	8.0	40	37	88	36	24	13	19	5.7
6	5.4	16	14	8.9	32	33	71	31	55	13	11	5.8
7	5.5	11	11	8.1	31	36	86	29	236	12	9.3	6.0
8	5.1	9.5	9.7	7.8	31	48	145	30	49	12	8.9	5.8
9	5.4	8.8	9.2	7.5	26	130	234	33	32	12	8.8	5.7
10	6.1	8.0	8.5	11	24	84	990	27	26	12	7.9	5.9
11	6.3	7.6	8.8	62	19	65	301	25	23	11	11	6.3
12	6.0	7.6	9.7	40	23	47	142	24	21	11	15	6.8
13	7.3	8.7	8.5	26	28	39	98	23	19	11	9.3	8.2
14	8.1	8.7	8.5	21	35	34	79	22	18	10	8.3	9.3
15	7.3	8.3	8.5	19	43	31	285	37	17	10	7.8	7.5
16	5.9	8.4	63	16	82	28	270	582	16	10	7.0	7.2
17	5.7	8.2	57	14	138	26	123	344	16	10	7.0	7.5
18	6.1	8.5	32	13	187	259	92	109	32	10	7.4	7.9
19	5.5	8.5	23	11	214	949	74	73	35	10	6.9	8.4
20	5.7	8.7	20	10	196	197	60	76	27	10	6.5	8.7
21	5.9	8.6	18	9.5	227	153	51	64	44	10	6.3	9.4
22	6.0	8.5	15	9.6	280	118	45	109	54	10	5.6	9.8
23	5.5	8.5	15	12	261	80	42	215	25	9.9	7.0	8.5
24	5.6	8.2	19	22	190	62	784	86	20	10	7.8	8.2
25	14	7.8	16	21	120	53	503	58	18	10	7.3	8.3
26	30	7.5	15	19	90	45	154	46	16	9.8	6.8	8.5
27	14	7.5	14	18	66	54	99	40	15	9.6	6.5	8.3
28	8.5	8.8	14	16	57	97	77	34	16	9.5	6.0	8.1
29	7.0	57	14	15	---	63	63	36	36	9.3	6.3	6.5
30	6.5	33	12	14	---	50	57	35	25	9.2	6.1	13
31	6.0	---	11	16	---	45	---	30	---	9.1	6.1	---
TOTAL	225.6	388.4	570.4	492.9	2702	3076	5697	2430	1021	357.4	260.0	227.2
MEAN	7.28	12.9	18.4	15.9	96.5	99.2	190	78.4	34.0	11.5	8.39	7.57
MAX	30	57	63	62	280	949	990	582	236	23	19	13
MIN	5.0	6.5	8.5	7.5	14	26	42	22	15	9.1	5.6	5.7
CFSM	.13	.23	.32	.28	1.68	1.73	3.31	1.37	.59	.20	.15	.13
IN.	.15	.25	.37	.32	1.75	1.99	3.69	1.57	.66	.23	.17	.15

CAL YR 1982 TOTAL 14754.0 MEAN 40.4 MAX 1320 MIN 5.0 CFSM .70 IN 9.56
WTR YR 1983 TOTAL 17447.9 MEAN 47.8 MAX 990 MIN 5.0 CFSM .83 IN 11.31

01616000 ABRAMS CREEK NEAR WINCHESTER, VA

LOCATION.--Lat 39°10'40", long 78°05'10", Frederick County, Hydrologic Unit 02070004, on right bank 1,000 ft upstream from bridge on State Highway 659, 0.9 mi upstream from mouth, and 4.4 mi east of Winchester.

DRAINAGE AREA.--16.5 mi^2.

PERIOD OF RECORD.--July 1949 to September 1960, June 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 526.46 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Slight diurnal fluctuation caused by sewage disposal plant above station at Winchester. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--15 years, 19.8 ft^3/s, 16.30 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 962 ft^3/s Dec. 4, 1950, gage height, 6.16 ft, from rating curve extended above 410 ft^3/s; minimum, 3.5 ft^3/s Oct. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0100	334	3.41	Apr. 24	1130	340	3.44
Apr. 3	0030	*347	3.48	May 16	1630	262	3.03
Apr. 10	0630	317	3.32	May 22	2030	214	2.78

Minimum discharge, 9.1 ft^3/s Feb. 11, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	15	20	12	14	26	26	50	35	27	18	18
2	15	15	18	12	26	27	49	48	33	23	18	18
3	14	16	17	13	28	26	104	47	33	23	18	18
4	15	41	15	13	19	24	47	46	34	23	18	18
5	15	20	14	13	17	23	40	47	30	23	18	18
6	15	17	15	13	16	24	37	44	58	23	18	18
7	15	15	15	13	17	27	47	44	37	22	17	17
8	15	16	14	12	17	32	51	44	29	21	16	17
9	14	16	14	12	17	32	75	43	28	21	17	17
10	13	16	14	19	16	30	167	43	26	21	17	18
11	14	16	14	19	14	27	71	42	24	21	24	17
12	15	16	14	17	15	24	54	40	23	21	18	17
13	19	16	14	16	17	22	47	40	23	20	18	21
14	17	14	14	14	20	22	44	40	24	18	18	16
15	16	14	15	14	25	23	95	45	27	18	18	15
16	15	15	29	13	35	24	77	119	26	18	18	14
17	14	15	19	14	43	24	57	66	35	18	18	14
18	15	15	16	13	54	74	43	44	47	19	23	13
19	15	15	14	12	48	137	38	43	33	19	20	13
20	15	14	14	12	43	44	37	44	46	19	19	15
21	17	13	14	13	44	44	35	44	39	18	18	19
22	15	15	14	13	48	38	35	68	33	17	22	16
23	14	16	15	17	46	34	38	61	29	17	26	15
24	14	15	14	15	39	37	198	44	26	17	21	14
25	26	14	13	14	35	28	116	39	24	17	21	14
26	20	14	13	14	32	26	60	38	24	18	19	14
27	17	14	14	14	29	33	54	35	24	17	18	15
28	16	21	14	14	27	34	53	33	30	17	19	15
29	15	33	14	14	---	29	51	35	34	18	19	15
30	14	18	13	14	---	28	53	32	27	18	18	32
31	14	---	13	14	---	27	---	34	---	17	20	---
TOTAL	484	510	470	432	801	1050	1899	1442	941	609	590	501
MEAN	15.6	17.0	15.2	13.9	28.6	33.9	63.3	46.5	31.4	19.6	19.0	16.7
MAX	26	41	29	19	54	137	198	119	58	27	26	32
MIN	13	13	13	12	14	22	26	32	23	17	16	13
CFSM	.95	1.03	.92	.84	1.73	2.06	3.84	2.82	1.90	1.19	1.15	1.01
IN.	1.09	1.15	1.06	.97	1.81	2.37	4.28	3.25	2.12	1.37	1.33	1.13

CAL YR 1982 TOTAL 9086 MEAN 24.9 MAX 250 MIN 13 CFSM 1.51 IN 20.48
WTR YR 1983 TOTAL 9729 MEAN 26.7 MAX 198 MIN 12 CFSM 1.62 IN 21.93

01620500 NORTH RIVER NEAR STOKESVILLE, VA

LOCATION.--Lat 38°20'15", long 79°14'25", Augusta County, Hydrologic Unit 02070005, George Washington National Forest, on left bank 575 ft upstream from highway bridge, 2.8 mi upstream from city of Staunton dam, 3.8 mi upstream from Broad Run, 5.0 mi west of Stokesville, and 7.8 mi upstream from Skidmore Fork.

DRAINAGE AREA.--17.2 mi².

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1903: 1960. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,054.57 ft National Geodetic Vertical Datum of 1929. Prior to June 10, 1958, at site 575 ft downstream at datum 6.0 ft lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--37 years, 25.7 ft³/s, 20.29 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,100 ft³/s June 17, 1949, gage height, 10.9 ft, from floodmarks, site and datum then in use, from rating curve extended above 900 ft³/s on basis of computation of peak flow over dam; minimum, 0.10 ft³/s Sept. 15, 16, 19-22, 1962, Sept. 7-13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 8.4 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0615	261	3.59	Apr. 24	1815	344	3.82
Apr. 15	1900	*373	3.90				

Minimum discharge, 0.28 ft³/s Sept. 26-29, 30, gage height, 1.67 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.6	43	11	17	29	41	12	11	6.3	.70	.63
2	1.5	2.5	40	11	27	29	47	11	11	6.4	.67	.61
3	1.4	2.3	35	10	76	27	147	9.9	10	5.9	.66	.57
4	1.3	2.6	31	9.6	73	26	124	9.4	12	5.2	.69	.54
5	1.3	3.1	26	9.2	55	27	90	8.7	10	4.7	2.7	.51
6	1.3	4.0	24	9.0	44	28	68	8.1	9.9	4.1	8.5	.48
7	1.3	4.1	21	8.6	37	31	56	7.3	10	3.5	4.6	.45
8	1.2	4.1	20	8.6	30	47	46	6.6	9.7	3.1	3.2	.44
9	1.2	3.9	19	8.1	27	92	43	6.3	8.9	2.6	2.3	.40
10	1.2	3.6	18	8.3	25	88	151	5.5	7.9	2.3	1.8	.39
11	1.3	3.4	17	9.2	23	69	168	5.0	7.2	2.1	1.5	.36
12	1.3	3.4	17	9.2	24	54	117	5.0	6.6	1.9	1.4	.36
13	1.5	4.0	15	9.2	27	44	84	4.7	6.2	1.7	1.4	.37
14	1.7	4.1	13	9.2	19	37	65	4.7	5.9	1.5	1.6	.36
15	1.8	4.1	13	9.7	19	31	208	4.7	6.3	1.4	1.4	.36
16	1.8	4.1	136	9.7	22	29	234	42	12	1.2	1.2	.36
17	1.8	4.1	117	9.4	27	26	145	76	13	1.2	1.1	.36
18	1.6	3.9	67	9.0	35	37	91	51	13	1.1	.96	.35
19	1.5	3.8	48	9.5	36	228	60	35	17	1.1	.89	.32
20	1.5	4.2	36	10	35	156	26	32	16	1.0	.82	.32
21	1.5	4.7	28	11	35	142	16	62	15	1.1	.71	.32
22	1.5	5.5	22	12	38	142	11	126	14	1.6	.62	.32
23	1.5	7.1	20	13	46	104	11	99	13	2.1	.57	.32
24	1.4	7.8	17	15	55	76	219	74	11	2.0	.60	.32
25	1.8	8.0	16	16	50	57	212	49	9.3	1.7	.61	.32
26	2.0	7.6	15	17	42	42	117	21	8.2	1.5	.58	.31
27	2.8	7.4	14	17	35	44	74	15	6.9	1.3	.49	.28
28	3.0	8.0	13	18	30	58	48	12	5.9	1.1	.56	.28
29	2.9	42	13	18	---	59	25	12	6.2	.99	.73	.28
30	2.8	53	12	18	---	54	15	13	7.2	.87	.67	.32
31	2.8	---	12	18	---	48	---	12	---	.75	.65	---
TOTAL	53.1	223.0	938	360.5	1009	1961	2759	839.9	300.3	73.31	44.88	11.61
MEAN	1.71	7.43	30.3	11.6	36.0	63.3	92.0	27.1	10.0	2.36	1.45	.39
MAX	3.0	53	136	18	76	228	234	126	17	6.4	8.5	.63
MIN	1.2	2.3	12	8.1	17	26	11	4.7	5.9	.75	.49	.28
CFSM	.10	.43	1.76	.67	2.09	3.68	5.35	1.58	.58	.14	.08	.02
IN.	.11	.48	2.03	.78	2.18	4.24	5.97	1.82	.65	.16	.10	.03

CAL YR 1982 TOTAL 9511.52 MEAN 26.1 MAX 301 MIN .86 CFSM 1.52 IN 20.57
WTR YR 1983 TOTAL 8573.60 MEAN 23.5 MAX 234 MIN .28 CFSM 1.37 IN 18.54

01622000 NORTH RIVER NEAR BURKETOWN, VA

LOCATION.--Lat 38°20'25", long 78°54'50", Rockingham County, Hydrologic Unit 02070005, on right bank 0.8 mi downstream from Pleasant Run, 2.8 mi northeast of Burketown, and 8.5 mi upstream from Middle River.

DRAINAGE AREA.--379 mi².

PERIOD OF RECORD.--October 1925 to October 1972, May 1975 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1171: 1936(M). WSP 1302: 1928-29(M), 1932-34(M), 1937-38(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,103.49 ft National Geodetic Vertical Datum of 1929. Prior to Dec. 12, 1938, nonrecording gage at site 3.0 mi downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--55 years, 369 ft³/s, 13.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,600 ft³/s June 18, 1949, gage height, 36.3 ft, from floodmarks, from rating curve extended above 16,000 ft³/s on basis of slope-area measurements at gage heights 32.4 ft and 36.3 ft, and contracted-opening measurement at gage height 36.3 ft; minimum, 16 ft³/s Nov. 23, 1965, result of temporary dam upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1852, that of June 18, 1949.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0800	2880	6.87	Apr. 15	1800	*5900	10.36
Mar. 21	1400	2620	6.55	Apr. 24	1500	5100	9.47
Apr. 3	0400	3360	7.48	May 16	1930	3440	7.58
Apr. 10	0930	2720	6.68	May 21	1900	3240	7.33

Minimum discharge, 56 ft³/s Aug. 23, gage height, 1.89 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	109	649	210	207	490	742	748	389	213	87	80
2	87	106	649	200	330	460	737	660	366	227	78	74
3	87	109	594	190	1300	423	2850	588	343	190	83	74
4	87	206	510	181	1320	389	2150	545	414	197	109	74
5	85	194	441	175	1030	374	1620	485	347	194	90	74
6	150	142	393	172	825	370	1290	432	313	175	96	70
7	109	133	351	165	660	397	1040	393	310	168	94	68
8	101	139	317	159	525	564	913	378	295	165	87	66
9	96	139	287	156	441	957	825	358	277	159	78	66
10	104	133	266	168	389	1100	2270	328	266	153	72	64
11	99	133	259	168	360	984	2380	313	248	147	68	64
12	96	130	262	162	340	830	1920	298	238	139	80	68
13	109	133	241	156	310	698	1500	291	224	139	74	80
14	114	122	217	153	302	588	1210	280	220	127	76	83
15	104	122	204	150	291	510	3230	284	217	124	76	70
16	101	117	1170	150	310	441	4000	906	200	117	66	70
17	99	114	1670	153	410	393	2580	1550	220	122	64	66
18	96	117	1220	147	644	580	1890	1310	354	117	66	66
19	101	117	918	139	704	2680	1440	1030	493	109	66	68
20	96	114	704	130	693	2320	1130	880	393	101	64	66
21	94	114	540	136	688	2250	891	1070	380	101	68	68
22	90	114	436	139	732	2140	726	1590	343	104	68	72
23	83	117	378	150	847	1710	660	1480	343	96	64	68
24	85	117	343	178	918	1340	3460	1210	313	106	78	68
25	124	114	317	181	880	1040	3680	962	280	101	72	68
26	122	119	291	190	742	820	2520	781	255	87	66	70
27	111	122	269	200	610	816	1880	632	234	80	64	68
28	111	136	259	207	530	1040	1440	525	217	80	70	66
29	111	416	244	207	---	990	1140	525	207	80	96	66
30	104	616	230	213	---	908	908	500	210	78	78	88
31	104	---	220	213	---	836	---	428	---	85	74	---
TOTAL	3147	4614	14849	5298	17338	29438	53022	21760	8909	4081	2372	2113
MEAN	102	154	479	171	619	950	1767	702	297	132	76.5	70.4
MAX	150	616	1670	213	1320	2680	4000	1590	493	227	109	88
MIN	83	106	204	130	207	370	660	280	200	78	64	64
CFSM	.27	.41	1.26	.45	1.63	2.51	4.66	1.85	.78	.35	.20	.19
IN.	.31	.45	1.46	.52	1.70	2.89	5.20	2.14	.87	.40	.23	.21

CAL YR 1982 TOTAL 179877 MEAN 493 MAX 4910 MIN 83 CFSM 1.30 IN 17.66
WTR YR 1983 TOTAL 166941 MEAN 457 MAX 4000 MIN 64 CFSM 1.21 IN 16.39

01624300 MIDDLE RIVER NEAR VERONA, VA

LOCATION.--Lat 38°14'36", long 79°02'08", Augusta County, Hydrologic Unit 02070005, on right bank at downstream side of bridge on State Highway 742, 2.7 mi downstream from Moffett Creek, and 3.2 mi northwest of Verona.

DRAINAGE AREA.--178 mi².

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,260.78 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by mill above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--16 years, 180 ft³/s, 13.73 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,650 ft³/s Sept. 6, 1979, gage height, 14.17 ft, from rating curve extended above 6,500 ft³/s; minimum, 3.7 ft³/s Jan. 30, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1430	1560	5.54	Apr. 15	2130	1700	5.86
Mar. 19	0730	2320	7.03	Apr. 24	1500	*3300	8.45
Apr. 3	0430	2200	6.83	May 16	1900	2320	7.02
Apr. 10	1200	1820	6.12				

Minimum discharge, 40 ft³/s Sept. 12, 21, gage height, 0.77 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	54	249	93	83	225	282	308	193	91	57	53
2	52	53	272	94	154	215	293	280	177	85	56	50
3	51	51	232	90	634	194	1520	264	165	84	54	50
4	49	72	188	87	413	180	734	256	194	87	57	48
5	52	83	155	85	285	166	522	231	165	86	64	49
6	51	72	140	83	232	160	424	210	149	83	64	46
7	48	65	119	81	194	164	374	195	140	80	60	46
8	49	63	107	77	157	279	346	186	133	76	56	45
9	50	60	101	76	140	665	331	179	124	75	54	44
10	53	60	95	78	131	462	1340	165	117	73	53	45
11	53	57	94	78	123	360	985	158	118	72	55	45
12	51	57	100	76	117	297	657	154	111	71	58	43
13	57	63	91	73	110	250	516	147	108	69	59	46
14	64	63	90	72	105	219	428	153	104	67	61	49
15	56	59	86	71	113	197	909	153	103	66	56	44
16	52	58	871	69	138	175	1120	918	102	64	51	44
17	51	57	710	69	190	161	695	1040	100	65	51	45
18	50	58	406	68	318	432	540	526	187	62	51	44
19	61	57	296	62	317	1670	446	381	218	64	50	43
20	52	57	234	60	305	831	376	323	129	63	48	42
21	44	60	189	62	328	740	330	368	132	62	49	42
22	45	61	155	65	386	662	294	545	120	66	47	45
23	48	67	139	69	470	510	285	442	108	64	49	43
24	51	63	129	80	505	416	1970	338	101	66	52	44
25	62	64	119	85	404	348	1290	275	95	65	51	43
26	69	62	113	86	322	297	741	240	93	64	48	44
27	61	60	121	88	265	311	559	210	89	61	52	42
28	55	67	108	87	241	484	458	188	88	58	64	42
29	56	413	94	86	---	407	382	215	87	57	58	42
30	56	336	98	86	---	343	340	216	95	57	51	47
31	55	---	97	85	---	315	---	205	---	56	51	---
TOTAL	1654	2472	5998	2421	7180	12135	19487	9469	3845	2159	1687	1355
MEAN	53.4	82.4	193	78.1	256	391	650	305	128	69.6	54.4	45.2
MAX	69	413	871	94	634	1670	1970	1040	218	91	64	53
MIN	44	51	86	60	83	160	282	147	87	56	47	42
CFSM	.30	.46	1.08	.44	1.44	2.20	3.65	1.71	.72	.39	.31	.25
IN.	.35	.52	1.25	.51	1.50	2.54	4.07	1.98	.80	.45	.35	.28

CAL YR 1982 TOTAL 72725 MEAN 199 MAX 4060 MIN 44 CFSM 1.12 IN 15.20
WTR YR 1983 TOTAL 69862 MEAN 191 MAX 1970 MIN 42 CFSM 1.07 IN 14.60

01624800 CHRISTIANS CREEK NEAR FISHERSVILLE, VA

LOCATION.--Lat 38°07'42", long 78°59'41", Augusta County, Hydrologic Unit 02070005, on right bank at upstream side of bridge on State Highway 794, 2.2 mi northwest of Fishersville, and 5.6 mi upstream from mouth.

DRAINAGE AREA.--70.1 mi².

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,230 ft, from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--16 years, 69.1 ft³/s, 13.39 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,850 ft³/s Oct. 5, 1972, gage height, 12.91 ft, from rating curve extended above 2,400 ft³/s; minimum, 3.8 ft³/s Jan. 11, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0030	*3030	10.82	Apr. 10	0600	2840	10.43
Apr. 2	2330	1720	7.47	Apr. 24	1130	1940	8.10

Minimum discharge, 14 ft³/s Feb. 11, gage height, 0.98 ft, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	200	44	32	148	108	121	56	39	23	32
2	21	21	132	42	241	137	302	115	53	67	23	24
3	20	21	98	42	146	121	477	110	51	46	22	23
4	20	66	83	40	88	113	172	108	60	38	22	22
5	27	65	72	40	68	104	145	97	50	52	24	21
6	23	39	65	39	66	99	134	91	47	43	31	21
7	21	32	57	37	65	101	145	87	46	35	25	20
8	20	30	52	36	61	170	143	86	44	33	23	19
9	21	27	49	36	57	148	239	82	43	32	22	19
10	24	26	45	41	56	126	1370	76	42	31	22	19
11	22	25	46	42	33	116	346	74	41	31	25	18
12	22	25	54	38	45	103	239	71	40	30	30	18
13	32	36	44	36	50	94	194	68	41	29	23	20
14	35	27	44	35	52	89	168	66	40	28	22	20
15	25	26	47	35	62	85	353	68	42	27	22	19
16	23	24	307	33	74	78	230	252	49	26	21	19
17	21	24	141	33	123	76	174	126	50	26	20	19
18	21	24	109	29	144	1320	155	90	48	26	21	18
19	21	23	94	27	144	1140	143	82	44	25	21	18
20	21	25	85	26	149	322	131	80	41	25	20	18
21	21	24	76	31	213	269	122	97	94	25	20	19
22	21	24	68	32	230	205	115	102	78	30	20	20
23	20	25	65	37	447	177	116	90	52	26	22	18
24	20	24	61	41	272	160	922	75	44	31	22	18
25	59	22	57	40	232	148	313	66	42	28	21	18
26	44	22	54	37	180	133	203	67	39	28	20	19
27	29	22	53	36	151	144	168	63	38	25	27	18
28	26	37	51	35	140	143	149	60	43	24	34	18
29	24	343	50	34	---	123	137	75	38	24	36	18
30	23	111	46	34	---	114	129	65	42	22	23	24
31	22	---	44	34	---	114	---	59	---	22	24	---
TOTAL	770	1262	2449	1122	3621	6420	7742	2769	1438	974	731	597
MEAN	24.8	42.1	79.0	36.2	129	207	258	89.3	47.9	31.4	23.6	19.9
MAX	59	343	307	44	447	1320	1370	252	94	67	36	32
MIN	20	21	44	26	32	76	108	59	38	22	20	18
CFSM	.35	.60	1.13	.52	1.84	2.95	3.68	1.27	.68	.45	.34	.28
IN.	.41	.67	1.30	.60	1.92	3.41	4.11	1.47	.76	.52	.39	.32

CAL YR 1982 TOTAL 24544 MEAN 67.2 MAX 1320 MIN 15 CFSM .96 IN 13.02
WTR YR 1983 TOTAL 29895 MEAN 81.9 MAX 1370 MIN 18 CFSM 1.17 IN 15.86

01625000 MIDDLE RIVER NEAR GROTTOES, VA

LOCATION.--Lat 38°15'42", long 78°51'44", Augusta County, Hydrologic Unit 02070005, on left bank at upstream side of bridge on State Highway 769 at Mount Meridian, 1.8 mi upstream from mouth, and 2.0 mi west of Grottoes.

DRAINAGE AREA.--375 mi².

PERIOD OF RECORD.--April 1927 to current year. Records for February 1925 to September 1926, published in WSP 601 and 621, are unreliable and should not be used.

REVISED RECORDS.--WSP 1051: 1928-29, 1930(M), 1932, 1935-37, 1938(M), 1940. WSP 1171: 1933. WSP 1302: 1928-29(M), 1931-34(M). WSP 2103: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,061.51 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, Nov. 16 to Jan. 7, which are fair. Small diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--56 years, 308 ft³/s, 11.15 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s Mar. 18, 1936, gage height, 28.57 ft, from floodmarks, from rating curve extended above 15,000 ft³/s; minimum, 19 ft³/s Jan. 12, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1877, that of Mar. 18, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0830	*6610	14.20	Apr. 24	2130	4640	12.13
Apr. 10	1300	4670	12.17				

Minimum discharge, 93 ft³/s Sept. 20-21, gage height, 3.43 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1942 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	117	600	215	180	540	514	566	360	226	120	149
2	106	116	680	220	268	524	521	524	346	221	122	132
3	106	116	500	200	920	464	2220	495	330	233	120	120
4	104	157	400	198	696	428	1240	481	397	202	124	115
5	105	318	330	195	495	400	876	453	346	209	140	113
6	129	196	290	188	422	383	739	425	310	204	197	111
7	112	161	250	182	388	391	671	402	293	190	146	106
8	107	146	230	180	346	550	674	386	279	178	132	106
9	110	140	220	173	307	948	635	380	265	173	122	102
10	117	133	210	182	293	797	3450	358	254	168	120	101
11	117	130	208	204	280	642	1820	344	246	163	122	101
12	116	126	206	187	270	543	1160	330	240	161	202	99
13	124	140	200	173	260	470	912	327	235	156	136	102
14	157	141	198	168	262	433	775	318	228	154	128	115
15	140	133	200	166	300	402	1140	372	226	149	126	110
16	122	131	1500	163	400	372	1790	988	243	144	120	102
17	114	130	1000	156	444	349	1110	1790	235	140	115	101
18	110	132	700	150	585	1630	880	876	251	140	113	101
19	109	129	500	145	649	5030	757	631	394	136	115	97
20	118	130	420	150	656	1630	660	546	553	138	113	95
21	121	140	370	165	710	1170	585	566	402	136	110	95
22	106	140	320	175	888	1100	534	800	484	154	108	101
23	104	160	295	180	1240	876	505	754	316	144	110	101
24	105	140	280	194	1260	743	2720	582	265	146	130	97
25	156	150	265	192	924	653	2580	484	238	144	119	99
26	221	140	255	192	793	572	1240	439	221	142	113	97
27	156	139	290	187	624	543	952	405	214	138	110	101
28	136	150	250	190	556	725	797	372	214	130	175	99
29	124	750	230	185	---	667	689	408	209	126	197	97
30	121	650	240	182	---	582	617	411	221	122	140	104
31	120	---	225	185	---	537	---	383	---	122	120	---
TOTAL	3801	5481	11862	5622	15416	25094	33763	16596	8815	4989	4065	3169
MEAN	123	183	383	181	551	809	1125	535	294	161	131	106
MAX	221	750	1500	220	1260	5030	3450	1790	553	233	202	149
MIN	104	116	198	145	180	349	505	318	209	122	108	95
CFSM	.33	.49	1.02	.48	1.47	2.16	3.00	1.43	.78	.43	.35	.28
IN.	.38	.54	1.18	.56	1.53	2.49	3.35	1.65	.87	.49	.40	.31

CAL YR 1982 TOTAL 128313 MEAN 352 MAX 4510 MIN 100 CFSM .94 IN 12.73
WTR YR 1983 TOTAL 138673 MEAN 380 MAX 5030 MIN 95 CFSM 1.01 IN 13.76

01626000 SOUTH RIVER NEAR WAYNESBORO, VA

LOCATION.--Lat 38°03'27", long 78°54'30", Waynesboro City, Hydrologic Unit 02070005, on right bank 80 ft downstream from bridge on State Highway 664, 1.3 mi southwest of post office at Waynesboro, and 2.4 mi downstream from Back Creek.

DRAINAGE AREA.--127 mi^2, of which 41 mi^2 are above flood-detention structures.

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,296.20 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow from 41 mi^2 above station slightly regulated by flood-detention reservoirs (sixteen of which were built by Soil Conservation Service between 1954 and 1961). Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--31 years, 138 ft^3/s, 14.76 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,400 ft^3/s Aug. 20, 1969, gage height, 15.27 ft, from rating curve extended above 4,200 ft^3/s on basis of contracted-opening measurement at gage height 13.95 ft; minimum, 7.0 ft^3/s July 18, 1966; minimum daily, 17 ft^3/s Aug. 8, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 14.3 ft, from floodmarks, discharge, 14,500 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0800	1410	6.11	Apr. 2	2400	2840	7.68
Mar. 8	1830	1100	5.48	Apr. 10	0700	2330	7.17
Mar. 19	0130	*3700	8.46	Apr. 24	1930	1820	6.47

Minimum discharge, 30 ft^3/s Sept. 27-28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	40	141	99	91	321	328	332	120	68	44	41
2	39	39	151	96	361	337	627	302	115	66	44	38
3	38	39	128	93	719	318	1830	277	108	87	44	39
4	38	60	115	89	459	303	1090	263	117	70	45	41
5	39	106	106	87	312	298	686	236	106	97	45	38
6	39	77	112	87	263	306	564	214	100	89	47	36
7	38	64	105	85	235	370	503	198	95	72	47	36
8	38	57	97	82	208	984	476	189	91	66	44	36
9	38	52	94	80	186	870	461	183	87	61	44	36
10	39	49	89	88	173	643	1990	167	82	59	44	35
11	40	48	88	101	147	509	1430	159	80	57	50	34
12	40	48	101	92	140	423	861	149	78	55	57	35
13	42	54	89	87	138	355	649	144	76	53	47	35
14	44	52	83	84	136	310	522	139	74	53	44	35
15	42	50	86	85	135	279	632	139	78	51	44	34
16	41	51	866	82	150	251	841	223	78	50	42	34
17	40	55	666	78	168	231	623	340	78	48	42	34
18	39	73	409	74	202	888	522	236	89	48	42	33
19	39	49	291	64	209	2570	457	201	91	47	42	32
20	39	50	244	68	223	1410	400	195	87	47	41	32
21	39	51	208	72	246	941	351	195	80	47	39	33
22	39	52	181	74	306	696	309	214	117	53	39	34
23	38	61	165	91	517	560	294	210	100	51	42	32
24	38	52	151	98	608	461	1510	186	82	55	41	32
25	54	52	140	98	510	400	1400	173	76	51	41	32
26	92	48	130	97	417	343	831	159	70	51	39	31
27	61	46	123	97	346	385	611	146	68	48	39	31
28	51	49	120	97	313	556	507	139	68	47	42	31
29	47	192	115	94	---	476	423	146	64	45	44	31
30	44	206	107	94	---	397	370	141	68	45	39	34
31	41	---	102	94	---	359	---	127	---	45	39	---
TOTAL	1337	1922	5603	2707	7918	17550	22098	6122	2623	1782	1343	1035
MEAN	43.1	64.1	181	87.3	283	566	737	197	87.4	57.5	43.3	34.5
MAX	92	206	866	101	719	2570	1990	340	120	97	57	41
MIN	38	39	83	64	91	231	294	127	64	45	39	31
CFSM	.34	.51	1.43	.69	2.23	4.46	5.80	1.55	.69	.45	.34	.27
IN.	.39	.56	1.64	.79	2.32	5.14	6.47	1.79	.77	.52	.39	.30

CAL YR 1982 TOTAL 44756 MEAN 123 MAX 939 MIN 38 CFSM .97 IN 13.11
WTR YR 1983 TOTAL 72040 MEAN 197 MAX 2570 MIN 31 CFSM 1.55 IN 21.10

01626850 SOUTH RIVER NEAR DOOMS, VA

LOCATION.--Lat 38°05'19", long 78°52'38", Augusta County, Hydrologic Unit 02070005, on left bank at downstream side of Hopeman Parkway Road bridge, 1.1 mi downstream from Steele Run, and 1.6 mi southwest of Dooms.

DRAINAGE AREA.--149 mi^2.

PERIOD OF RECORD.--April 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,247.04 ft National Geodetic Vertical Datum of 1929 (Norfolk and Western Railway bench mark). Prior to Sept. 18, 1980, nonrecording gage at site 30 ft upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--9 years, 199 ft^3/s, 18.14 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 8,000 ft^3/s Mar. 19, 1975, gage height, 12.02 ft; minimum, 42 ft^3/s Aug. 29, 30, 1981, gage height, 2.17 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1000	2160	7.40	Apr. 3	0100	4140	10.10
Feb. 3	0930	1460	5.94	Apr. 10	0800	3600	9.57
Mar. 8	2000	1560	6.17	Apr. 16	0530	1090	5.10
Mar. 19	0130	*5570	11.07	Apr. 24	1230	2630	8.19

Minimum discharge, 54 ft^3/s Sept. 20, 28, 29, 30, gage height, 2.18 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	67	202	128	128	348	348	352	144	82	69	67
2	57	67	201	125	147	364	840	326	137	80	69	65
3	57	67	172	125	1040	348	2620	300	134	110	69	65
4	57	117	156	119	752	332	1300	284	140	90	90	67
5	80	140	144	119	451	323	760	259	128	130	125	67
6	57	105	146	117	345	329	594	233	119	110	95	65
7	57	91	139	117	307	403	537	217	117	100	80	65
8	59	84	130	114	275	1330	505	208	111	95	71	62
9	60	79	125	111	240	1170	544	201	108	92	69	60
10	60	76	120	125	220	752	2880	185	102	88	69	60
11	61	73	120	134	190	550	1770	176	100	88	108	58
12	61	79	137	128	170	451	979	166	97	82	90	58
13	73	84	122	119	155	377	718	160	95	78	73	67
14	65	83	111	117	150	329	554	153	92	76	71	60
15	63	81	119	117	149	297	764	153	97	76	71	58
16	61	80	1220	114	155	265	979	275	95	73	69	58
17	61	80	806	111	163	240	701	355	97	73	69	58
18	61	102	464	111	192	1440	558	259	160	73	67	58
19	61	79	339	102	220	3710	483	220	128	73	69	60
20	61	80	284	100	233	1710	422	214	119	71	67	60
21	63	81	243	102	256	1070	371	217	117	73	65	65
22	60	81	214	105	307	769	332	236	140	78	65	60
23	59	91	195	125	626	594	332	230	110	82	69	58
24	60	81	182	137	752	486	2040	204	100	82	65	58
25	101	81	169	137	586	419	1710	198	92	78	65	58
26	119	78	163	134	464	364	962	188	85	78	62	58
27	89	76	153	134	380	422	685	176	80	73	65	58
28	78	90	150	134	342	606	550	166	78	71	73	58
29	72	259	147	131	---	508	451	172	80	71	73	56
30	67	276	137	131	---	422	393	169	83	69	65	78
31	67	---	134	131	---	380	---	153	---	69	67	---
TOTAL	2066	2908	7144	3754	9395	21108	26682	6805	3285	2564	2294	1845
MEAN	66.6	96.9	230	121	336	681	889	220	110	82.7	74.0	61.5
MAX	119	276	1220	137	1040	3710	2880	355	160	130	125	78
MIN	57	67	111	100	128	240	332	153	78	69	62	56
CFSM	.45	.65	1.54	.81	2.26	4.57	5.97	1.48	.74	.56	.50	.41
IN.	.52	.73	1.78	.94	2.35	5.27	6.66	1.70	.82	.64	.57	.46

CAL YR 1982 TOTAL 60974 MEAN 167 MAX 1610 MIN 52 CFSM 1.12 IN 15.22
WTR YR 1983 TOTAL 89850 MEAN 246 MAX 3710 MIN 56 CFSM 1.65 IN 22.43

01627500 SOUTH RIVER AT HARRISTON, VA

LOCATION.--Lat 38°13'07", long 78°50'13", Augusta County, Hydrologic Unit 02070005, on left bank 100 ft downstream from bridge on State Highway 778, 0.3 mi northwest of Harriston, 0.6 mi downstream from Paine Run, and 7.2 mi upstream from confluence with North River.

DRAINAGE AREA.--212 mi².

PERIOD OF RECORD.--February 1925 to September 1951, October 1968 to current year.

REVISED RECORDS.--WSP 1171: 1926(M), 1927-28, 1929-32(M), 1933, 1934(M), 1935, 1937. WSP 1302: 1937(M), 1938(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,129.87 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--41 years, 253 ft³/s, 16.21 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft³/s Oct. 15, 1942, gage height, 17.2 ft, from rating curve extended above 10,000 ft³/s; minimum, 17 ft³/s Nov. 14, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1870 and 1877 reached a stage of about 18.8 ft, from information by observer in 1925.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1430	2030	6.34	Apr. 3	0600	5340	9.11
Feb. 3	0300	1620	5.75	Apr. 10	1300	4960	8.89
Feb. 24	0100	1350	5.37	Apr. 15	2100	1380	5.41
Mar. 9	0030	1780	5.98	Apr. 24	1630	3560	7.92
Mar. 19	0500	*10300	11.44				

Minimum discharge, 68 ft³/s Oct. 3, 4, 22, 23-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	78	310	162	152	542	506	522	220	182	88	88
2	72	77	312	157	342	562	594	478	208	185	85	82
3	70	77	268	155	1360	538	3680	446	200	165	85	80
4	70	126	232	147	856	514	1780	426	220	150	92	82
5	93	187	208	145	562	498	1120	390	200	190	118	82
6	79	148	200	142	458	494	874	356	185	187	157	79
7	72	125	188	140	402	554	778	331	177	155	104	77
8	72	115	176	135	353	1290	725	321	170	130	92	77
9	72	107	165	130	307	1550	675	314	165	122	88	76
10	75	100	158	145	275	1100	3730	293	157	116	88	75
11	73	96	155	170	259	832	2490	275	152	112	94	74
12	74	93	174	157	240	670	1380	262	145	110	155	73
13	87	103	160	147	230	566	1030	253	142	105	99	77
14	83	98	147	140	225	498	820	253	140	102	89	81
15	77	95	146	140	220	450	994	265	140	101	88	75
16	74	94	1130	137	241	406	1290	434	142	99	85	73
17	71	94	1090	132	272	370	1020	562	140	95	84	73
18	71	108	665	130	356	1230	826	438	197	96	84	71
19	71	102	478	116	378	6680	705	363	220	96	84	73
20	71	93	394	112	406	2460	610	349	195	94	81	73
21	72	96	335	118	446	1520	546	349	205	94	80	76
22	71	99	289	122	542	1110	494	378	217	102	79	81
23	70	91	259	155	910	880	466	370	200	98	82	74
24	69	89	238	170	1210	725	2380	331	170	108	88	73
25	109	87	223	167	970	615	2310	307	155	99	81	71
26	133	87	208	165	755	542	1360	289	142	98	80	71
27	112	82	197	165	615	554	982	272	132	94	79	73
28	94	114	190	162	554	796	802	253	135	91	82	71
29	87	293	185	162	---	710	660	265	135	89	104	71
30	82	402	175	157	---	594	574	256	132	88	85	91
3'	79	---	167	157	---	546	---	238	---	87	81	---
TOTAL	2480	3556	9222	4539	13896	30396	36201	10639	5138	3640	2861	2293
MEAN	80.0	119	297	146	496	981	1207	343	171	117	92.3	76.4
MAX	133	402	1130	170	1360	6680	3730	562	220	190	157	91
MIN	69	77	146	112	152	370	466	238	132	87	79	71
CFSM	.38	.56	1.40	.69	2.34	4.63	5.69	1.62	.81	.55	.44	.36
IN.	.44	.62	1.62	.80	2.44	5.33	6.35	1.87	.90	.64	.50	.40

CAL YR 1982 TOTAL 79184 MEAN 217 MAX 2040 MIN 64 CFSM 1.02 IN 13.89
WTR YR 1983 TOTAL 124861 MEAN 342 MAX 6680 MIN 69 CFSM 1.61 IN 21.91

01628060 WHITE OAK RUN NEAR GROTTOES, VA

LOCATION.--Lat 38°15'01", long 78°44'57", Rockingham County, Hydrologic Unit 02070005, Shenandoah National Park, on left bank 700 ft upstream from Madison Run, 0.2 mi south of Madison Run Forest Trail, 1.4 mi upstream from southwest boundary of Shenandoah National Park, and 4.3 mi southeast of Grottoes.

DRAINAGE AREA.--1.94 mi².

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,480 ft, from topographic map.

REMARKS.--Records fair. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 300 ft³/s Mar. 18, 1983, gage height, 3.53 ft; no flow many days in 1980-83.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 3	0245	41	2.07	Apr. 10	0830	64	2.31
Mar. 18	2315	*300	3.53	Apr. 24	1300	108	2.64
Apr. 2	2215	153	2.90				

No flow during September and many days during October, July, and August.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.08	11	.70	.87	5.1	2.3	2.9	1.1	.45	.00	.00
2	.01	.08	13	.65	12	6.0	23	2.5	.96	.64	.00	.00
3	.01	.08	9.0	.65	29	6.3	66	2.2	.87	.39	.00	.00
4	.00	1.8	6.1	.57	14	6.6	18	2.0	1.1	.29	.00	.00
5	.01	3.2	4.3	.50	8.1	8.7	11	1.6	.81	.24	.00	.00
6	.02	2.4	3.3	.50	5.8	8.5	7.6	1.3	.65	.29	.01	.00
7	.01	1.7	2.4	.50	4.4	7.1	5.4	1.1	.57	.20	.02	.00
8	.01	1.3	1.7	.50	3.4	7.9	4.0	1.1	.54	.16	.01	.00
9	.00	1.0	1.5	.46	2.6	13	4.4	1.0	.47	.12	.00	.00
10	.01	.81	1.2	.54	2.2	12	47	.85	.38	.12	.00	.00
11	.01	.68	1.2	.75	2.5	8.6	23	.77	.33	.09	.01	.00
12	.01	.64	1.1	.77	1.7	6.4	14	.71	.28	.09	.03	.00
13	.03	.76	.91	.77	1.4	4.8	9.9	.64	.24	.06	.02	.00
14	.06	.56	.75	.81	1.3	3.8	7.0	.61	.21	.05	.00	.00
15	.03	.48	.74	.89	1.3	3.1	9.0	.57	.20	.04	.00	.00
16	.03	.43	13	.97	1.3	2.5	14	2.8	.20	.04	.00	.00
17	.01	.37	14	.91	1.9	1.9	13	5.0	.18	.03	.00	.00
18	.00	.35	8.8	.85	3.4	30	9.3	5.2	.20	.02	.00	.00
19	.00	.33	6.1	.76	3.6	120	6.5	4.2	.42	.02	.00	.00
20	.00	.40	4.4	.62	4.0	21	4.6	3.3	.88	.02	.00	.00
21	.00	.41	3.3	.60	4.5	13	3.3	3.1	1.8	.02	.00	.00
22	.00	.46	2.5	.61	7.6	8.4	2.6	3.2	1.4	.03	.00	.00
23	.00	.57	2.0	.76	16	5.6	2.6	3.6	1.1	.02	.00	.00
24	.00	.68	1.7	.83	17	4.2	62	3.7	.76	.02	.00	.00
25	.10	.58	1.4	.92	11	3.4	28	3.3	.54	.02	.00	.00
26	.52	.51	1.2	1.0	7.2	2.7	15	2.9	.40	.01	.00	.00
27	.27	.50	1.1	1.1	5.5	2.6	9.7	2.4	.29	.00	.00	.00
28	.13	.69	.98	1.1	4.6	2.6	6.7	1.9	.28	.00	.00	.00
29	.09	16	.99	1.0	---	2.4	4.7	1.8	.24	.00	.00	.00
30	.09	12	.85	1.0	---	2.3	3.6	1.6	.24	.00	.00	.00
31	.09	---	.73	.98	---	2.4	---	1.3	---	.00	.00	---
TOTAL	1.56	49.85	121.25	23.57	178.17	332.9	437.2	69.15	17.64	3.48	.10	.00
MEAN	.050	1.66	3.91	.76	6.36	10.7	14.6	2.23	.59	.11	.003	.000
MAX	.52	16	14	1.1	29	120	66	5.2	1.8	.64	.03	.00
MIN	.00	.08	.73	.46	.87	1.9	2.3	.57	.18	.00	.00	.00
CFSM	.03	.86	2.02	.39	3.28	5.52	7.53	1.15	.30	.06	.002	.000
IN.	.03	.96	2.32	.45	3.41	6.38	8.38	1.33	.34	.07	.00	.00

CAL YR 1982 TOTAL 1019.46 MEAN 2.79 MAX 142 MIN .00 CFSM 1.44 IN 19.54
WTR YR 1983 TOTAL 1234.87 MEAN 3.38 MAX 120 MIN .00 CFSM 1.74 IN 23.67

01628500 SOUTH FORK SHENANDOAH RIVER NEAR LYNNWOOD, VA

LOCATION.--Lat 38°19'21", long 78°45'18", Rockingham County, Hydrologic Unit 02070005, on left bank 1.2 mi northeast of Lynnwood and 3.3 mi downstream from confluence of North and South Rivers.

DRAINAGE AREA.--1,084 mi².

PERIOD OF RECORD.--September 1930 to current year.

REVISED RECORDS.--WSP 1171: 1933(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,013.17 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, July 12 to Aug. 25, which are fair. Diurnal fluctuation at low flow prior to 1960 caused by mill at Lynnwood. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--53 years, 994 ft³/s, 12.45 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/s Oct. 15, 1942, gage height, 27.2 ft, from rating curve extended above 22,000 ft³/s on basis of computations of flow over dam at gage heights 23.60 ft and 27.2 ft; minimum, 32 ft³/s Sept. 20, 1932, gage height, 1.63 ft; minimum daily, 93 ft³/s Sept. 21, 29, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 15, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0900	*17600	14.87	Apr. 15	2230	9150	10.64
Apr. 3	0930	10600	11.55	Apr. 24	2030	12500	12.57
Apr. 10	1500	11900	12.22				

Minimum discharge, 262 ft³/s Sept. 20-21, 27-28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	340	316	1580	585	525	1630	1810	1960	1030	724	320	346
2	334	315	1730	562	617	1600	1670	1750	979	758	330	330
3	331	313	1400	547	3370	1460	8590	1600	911	649	340	312
4	327	359	1200	525	3040	1360	5680	1510	1070	593	360	308
5	331	742	1040	503	2180	1290	3890	1410	979	625	400	303
6	395	488	931	497	1720	1260	3100	1280	878	617	470	298
7	366	410	835	484	1460	1340	2650	1190	826	562	410	289
8	337	379	736	471	1240	2170	2450	1130	818	525	380	285
9	333	376	682	458	1070	3510	2200	1100	760	497	365	280
10	341	363	638	484	979	3160	9100	1030	730	484	350	271
11	342	355	614	532	937	2590	7480	975	700	471	400	271
12	337	352	647	503	843	2140	4850	934	670	458	450	271
13	349	366	625	471	820	1780	3750	900	641	450	420	289
14	388	363	561	458	805	1550	3060	872	633	435	390	325
15	367	348	562	451	801	1400	4810	924	641	420	360	298
16	344	341	2380	445	852	1240	7750	2200	641	410	340	285
17	326	338	4360	439	1040	1140	5090	4370	625	410	310	276
18	320	344	2810	421	1510	2990	3890	2870	767	410	300	271
19	321	350	2010	385	1780	14400	3180	2150	1020	395	320	271
20	319	338	1580	380	1830	7310	2620	1900	1560	410	300	267
21	326	340	1300	390	1920	5120	2180	1970	1610	400	295	267
22	311	344	1100	421	2320	4570	1870	2940	1220	420	300	285
23	298	347	971	445	3260	3670	1680	2820	962	400	300	276
24	293	355	886	510	3820	2990	7420	2250	843	395	340	271
25	347	343	826	517	3010	2470	9580	1890	758	390	308	267
26	487	341	775	517	2520	2040	5650	1600	690	380	298	267
27	402	342	724	525	1980	1860	4090	1400	649	360	289	271
28	362	364	699	540	1720	2640	3310	1230	625	350	335	267
29	339	1330	673	532	---	2470	2700	1210	609	340	433	267
30	330	1780	617	532	---	2150	2250	1230	617	330	363	285
31	325	---	601	540	---	1950	---	1130	---	315	316	---
TOTAL	10668	13442	36093	15070	47969	87250	128350	51725	25462	14383	10892	8569
MEAN	344	448	1164	486	1713	2815	4278	1669	849	464	351	286
MAX	487	1780	4360	585	3820	14400	9580	4370	1610	758	470	346
MIN	293	313	561	380	525	1140	1670	872	609	315	289	267
CFSM	.32	.41	1.07	.45	1.58	2.60	3.95	1.54	.78	.43	.32	.26
IN.	.37	.46	1.24	.52	1.65	2.99	4.40	1.78	.87	.49	.37	.29

CAL YR 1982 TOTAL 417251 MEAN 1143 MAX 10800 MIN 293 CFSM 1.05 IN 14.32
WTR YR 1983 TOTAL 449873 MEAN 1233 MAX 14400 MIN 267 CFSM 1.14 IN 15.44

01629500 SOUTH FORK SHENANDOAH RIVER NEAR LURAY, VA

LOCATION.--Lat 38°38'46", long 78°32'06", Page County, Hydrologic Unit 02070005, on right bank between bridges on U.S. Highway 211, 1.2 mi downstream from Big Run, 2.2 mi upstream from Mill Creek, and 4.1 mi west of Luray.

DRAINAGE AREA.--1,377 mi^2.

PERIOD OF RECORD.--April 1925 to September 1930, October 1938 to September 1951, June 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 721.76 ft National Geodetic Vertical Datum of 1929. April 1925 to September 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Diurnal fluctuation at low and medium flow caused by powerplant 10 mi above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 1,287 ft^3/s, 12.69 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s Oct. 16, 1942, gage height, 25.7 ft; minimum, 70 ft^3/s Sept. 27, 1941, gage height, 2.15 ft; minimum daily, 135 ft^3/s Sept. 16, 1925, Sept. 28, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of 23.6 ft, from floodmarks, discharge, 81,600 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	1500	*25800	13.99	Apr. 16	0700	11900	9.36
Apr. 3	1730	14700	10.45	Apr. 25	0400	18300	11.75
Apr. 10	2200	17100	11.35				

Minimum discharge, 137 ft^3/s Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	430	444	1890	828	740	2200	2300	2600	1410	844	404	424
2	418	437	2160	812	796	2170	2130	2280	1330	998	430	437
3	411	430	1830	788	3340	2060	9550	2100	1290	980	398	430
4	411	540	1590	756	4360	1900	9360	1950	1370	884	385	404
5	404	900	1400	732	3050	1840	5720	1850	1410	844	404	398
6	411	948	1240	694	2310	1790	4350	1710	1230	868	470	398
7	457	686	1150	702	1950	1800	3580	1580	1160	820	547	398
8	464	605	1050	686	1690	2020	3260	1520	1120	756	491	379
9	418	568	948	678	1470	4120	2940	1460	1080	709	437	379
10	430	547	892	656	1320	4290	10200	1380	1020	678	411	373
11	430	525	892	709	1310	3460	12800	1320	989	648	424	367
12	437	518	908	820	1110	2840	7560	1270	956	626	424	373
13	444	518	900	663	1100	2370	5450	1230	932	612	547	430
14	470	525	860	702	1090	2010	4330	1200	916	568	477	430
15	511	532	780	686	1090	1820	4310	1200	908	561	371	430
16	477	504	1170	678	1090	1690	10800	2660	908	540	411	411
17	444	477	5640	663	1290	1800	7560	6640	884	525	411	398
18	430	484	3940	641	1780	1950	5490	4480	908	532	355	385
19	430	484	2680	597	2310	19200	4380	3150	1120	477	367	379
20	379	491	2090	554	2420	12400	3570	2580	1530	511	373	367
21	424	484	1740	540	2520	7240	2940	2490	2220	491	367	392
22	430	484	1490	583	3020	6220	2510	3830	1690	484	361	385
23	404	484	1300	619	3970	5030	2230	4040	1350	484	373	392
24	392	491	1200	671	5820	4010	6590	3240	1180	504	379	392
25	430	491	1130	748	4420	3280	15600	2560	1060	498	404	392
26	626	470	1090	740	3640	2710	8740	2150	972	491	411	385
27	686	464	1010	740	2820	2380	5860	1880	932	504	392	385
28	554	491	940	740	2350	2890	4570	1670	892	386	379	385
29	504	788	932	740	---	3130	3700	1600	876	437	411	392
30	464	2160	900	740	---	2760	3030	1640	844	411	525	404
31	457	---	876	748	---	2460	---	1550	---	398	470	---
TOTAL	14077	17970	46618	21654	64176	115840	175410	70810	34487	19069	13009	11894
MEAN	454	599	1504	699	2292	3737	5847	2284	1150	615	420	396
MAX	686	2160	5640	828	5820	19200	15600	6640	2220	998	547	437
MIN	379	430	780	540	740	1690	2130	1200	844	386	355	367
CFSM	.33	.44	1.09	.51	1.66	2.71	4.25	1.66	.84	.45	.31	.29
IN.	.38	.49	1.26	.58	1.73	3.13	4.74	1.91	.93	.52	.35	.32

CAL YR 1982 TOTAL 530033 MEAN 1452 MAX 17500 MIN 379 CFSM 1.05 IN 14.32
WTR YR 1983 TOTAL 605014 MEAN 1658 MAX 19200 MIN 355 CFSM 1.20 IN 16.34

01631000 SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA

LOCATION.--Lat 38°54'50", long 78°12'40", Warren County, Hydrologic Unit 02070005, on left bank 0.7 mi downstream from bridge on State Highway 619, 1.0 mi west of Front Royal, and 3.5 mi upstream from confluence with North Fork.

DRAINAGE AREA.--1,642 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1899 to September 1906, September 1930 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1171: 1935(M), 1937(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 469.38 ft National Geodetic Vertical Datum of 1929. June 1899 to July 1906, nonrecording gage at site 1.0 mi upstream at different datum.

REMARKS.--Records good. Large diurnal fluctuation at low and medium flow caused by powerplants above station prior to 1954; occasional large diurnal fluctuation thereafter. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--60 years, 1,590 ft³/s, 13.15 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft³/s Oct. 16, 1942, gage height, 34.8 ft, from floodmark in gage well, from rating curve extended above 92,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 59 ft³/s Jan. 30, 1934, gage height, 0.56 ft; minimum daily, 103 ft³/s Sept. 30, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 20	0200	*26500	12.61	Apr. 16	1730	11800	7.95
Apr. 4	0330	14400	8.91	Apr. 25	1400	19200	10.48
Apr. 11	0745	17600	9.98				

Minimum discharge, 321 ft³/s Oct. 21, gage height, 1.06 ft; minimum daily, 348 ft³/s Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	476	482	2380	884	792	2770	2800	3430	1770	862	425	539
2	444	471	2150	855	858	2710	2660	3060	1600	902	438	469
3	424	457	2400	811	1750	2670	5710	2840	1470	985	482	449
4	418	630	1950	801	4950	2510	12000	2710	1460	940	440	477
5	406	761	1660	759	4090	2390	7170	2520	1580	899	471	460
6	407	1080	1510	759	3090	2350	5350	2270	1520	893	455	440
7	408	1080	1220	691	2560	2290	4500	2130	1350	833	514	428
8	418	699	1180	710	2190	2430	3980	2020	1260	796	562	423
9	492	628	1100	698	1890	3530	3770	1920	1110	737	546	421
10	433	626	932	732	1620	4890	6410	1860	1110	690	504	399
11	419	594	911	783	1560	4370	15600	1770	1040	652	457	401
12	423	556	950	807	1350	3660	9550	1620	989	633	477	398
13	452	579	932	898	1380	3070	6640	1570	965	615	502	439
14	456	553	928	744	1360	2670	5310	1510	927	595	537	471
15	449	528	862	777	1360	2380	5030	1530	908	573	524	491
16	476	575	1060	743	1370	2120	8890	2740	914	544	476	460
17	468	529	3180	714	1370	1930	9380	7250	907	530	405	452
18	420	495	4990	710	1830	2650	6700	6270	958	517	457	420
19	418	509	3490	680	2610	11700	5340	4360	956	530	460	398
20	439	497	2670	700	2980	19700	4490	3450	1210	534	360	385
21	389	520	2190	693	3080	9110	3780	3080	2410	482	399	397
22	393	516	1840	691	3430	6960	3220	3830	2970	501	398	420
23	412	515	1570	664	4310	5860	2850	4640	1920	461	407	376
24	391	517	1370	698	5800	4910	4750	4160	1500	506	402	367
25	458	496	1240	735	5500	4250	16000	3400	1260	534	411	379
26	555	504	1190	797	4580	3620	11600	2870	1110	496	420	372
27	662	492	1120	794	3740	3140	7370	2510	1030	513	446	359
28	723	499	1020	773	3080	3080	5660	2180	924	475	428	355
29	583	698	974	762	---	3570	4730	1970	950	454	424	348
30	528	1380	953	780	---	3350	3970	1910	939	415	416	413
31	486	---	906	781	---	3020	---	1890	---	427	522	---
TOTAL	14326	18466	50828	23424	74480	133660	195210	89270	39017	19524	14165	12606
MEAN	462	616	1640	756	2660	4312	6507	2880	1301	630	457	420
MAX	723	1380	4990	898	5800	19700	16000	7250	2970	985	562	539
MIN	389	457	862	664	792	1930	2660	1510	907	415	360	348
CFSM	.28	.38	1.00	.46	1.62	2.63	3.96	1.75	.79	.38	.28	.26
IN.	.32	.42	1.15	.53	1.69	3.03	4.42	2.02	.88	.44	.32	.29

CAL YR 1982 TOTAL 572715 MEAN 1569 MAX 15900 MIN 389 CFSM .96 IN 12.98
WTR YR 1983 TOTAL 684976 MEAN 1877 MAX 19700 MIN 348 CFSM 1.14 IN 15.52

01631000 SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1953-56, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1952 to September 1956, April 1968 to September 1977, October 1979 to August 1980.
WATER TEMPERATURES: October 1952 to September 1956, April 1968 to September 1977, October 1979 to August 1980.
SUSPENDED-SEDIMENT DISCHARGE: April 1953 to September 1956.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 19...	1150	415	385	9.0	12.0	9	--	170	9	43	15	14
DEC 06...	1230	1520	230	8.2	14.0	15	--	100	14	28	7.5	6.3
JAN 18...	1245	662	324	9.1	.0	8	--	140	14	35	12	12
MAR 15...	1350	2340	190	8.4	10.0	15	--	80	9	22	6.2	4.7
MAY 23...	1100	4630	194	7.9	18.5	5	--	91	14	25	6.9	3.9
JUL 12...	1315	625	330	8.8	25.5	18	--	160	15	39	14	10
AUG 16...	0845	503	348	8.9	23.0	20	8.1	160	14	41	15	13

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)
OCT 19...	2.7	160	26	12	.10	2.5	220	212	<.010	1.3	.250	6
DEC 06...	2.5	87	17	7.6	<.10	6.6	138	134	.030	1.3	.160	34
JAN 18...	1.1	123	20	10	<.10	1.8	159	173	.010	1.5	.090	10
MAR 15...	1.4	72	14	6.0	<.10	5.8	107	108	.010	1.1	.060	19
MAY 23...	1.6	77	11	4.2	.10	6.2	109	111	.030	1.2	--	37
JUL 12...	2.7	140	21	10	.10	5.8	197	187	<.010	1.6	.120	<3
AUG 16...	2.7	150	23	11	<.10	4.8	242	201	<.010	.93	.240	10

< Actual value is known to be less than the value shown.

01632000 NORTH FORK SHENANDOAH RIVER AT COOTES STORE, VA

LOCATION.--Lat 38°38'13", long 78°51'11", Rockingham County, Hydrologic Unit 02070006, on right bank at Cootes Store, 300 ft upstream from bridge on State Highway 259, and 3.7 mi upstream from Linville Creek.

DRAINAGE AREA.--210 mi^2.

PERIOD OF RECORD.--February 1925 to current year.

REVISED RECORDS.--WSP 726: 1928-31. WSP 951: 1936, 1939(M). WSP 1171: 1935, 1937, 1938(M). WSP 1502: 1926, 1927-28(M), 1929, 1930-34(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,051.8 ft National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 15, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 191 ft^3/s, 12.35 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s Oct. 15, 1942, gage height, 25.3 ft, from floodmark, from rating curve extended above 9,000 ft^3/s on basis of contracted-opening measurement of peak flow; minimum, 0.20 ft^3/s Aug. 28, 29, Sept. 4, 1957, Sept. 7-10, 1966; minimum gage height, 1.74 ft Sept. 7-10, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1836, that of Oct. 15, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0615	*6470	10.56	Apr. 15	1700	6440	10.54
Apr. 3	0300	3990	8.48	Apr. 24	1615	5200	9.58

Minimum discharge, 1.1 ft^3/s Sept. 11, 12, gage height, 1.83 ft.

DISCHARGE. IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	13	258	52	85	216	304	227	101	21	21	2.6
2	5.4	13	312	48	366	200	374	199	88	23	21	2.4
3	5.1	12	238	45	1250	184	2660	181	75	22	20	2.2
4	5.0	50	187	42	694	171	1070	168	76	21	24	2.1
5	4.7	93	152	39	416	162	616	145	66	43	23	2.2
6	4.5	57	129	37	312	163	442	125	57	30	28	1.8
7	4.4	43	107	36	251	170	370	108	57	23	18	1.6
8	4.1	37	91	35	205	220	340	98	50	21	7.5	1.4
9	4.4	34	78	34	170	686	396	93	43	18	5.8	1.4
10	5.4	33	68	38	138	612	2050	82	39	16	5.3	1.3
11	5.5	30	62	44	128	450	2080	73	35	14	4.9	1.2
12	5.2	29	63	45	145	352	989	66	32	12	6.4	1.2
13	7.6	28	55	44	125	280	600	62	29	11	7.7	1.7
14	9.6	26	48	44	108	231	430	60	27	9.4	6.7	1.8
15	8.4	24	45	44	115	199	3170	64	25	8.0	5.5	1.6
16	8.7	22	1020	44	217	172	2350	1130	24	7.3	4.6	1.5
17	8.9	21	717	42	445	149	955	1570	24	10	4.1	1.4
18	8.9	20	396	36	736	252	587	675	30	17	3.9	1.9
19	8.7	18	276	36	608	4200	421	417	104	17	3.5	2.4
20	8.9	19	211	35	516	1380	333	320	68	17	2.9	2.2
21	8.7	18	169	39	480	1510	267	378	52	16	2.5	2.5
22	8.3	18	135	35	574	1210	219	642	48	20	2.2	3.5
23	8.3	18	112	40	771	688	197	629	37	21	3.1	2.6
24	7.9	17	98	53	719	462	3060	460	30	25	3.8	2.7
25	12	17	87	57	492	355	2570	341	26	25	3.5	2.7
26	16	16	79	60	357	274	1010	266	23	26	3.0	2.6
27	17	16	73	65	275	391	590	211	21	24	2.7	2.6
28	17	19	68	69	235	763	418	173	19	23	2.6	2.6
29	15	168	65	74	---	550	331	157	19	22	3.1	2.5
30	15	221	61	78	---	416	270	136	21	20	2.6	4.0
31	14	---	56	82	---	357	---	115	---	21	2.3	---
TOTAL	268.2	1150	5516	1472	10933	17425	29469	9371	1346	603.7	255.2	64.2
MEAN	8.65	38.3	178	47.5	390	562	982	302	44.9	19.5	8.23	2.14
MAX	17	221	1020	82	1250	4200	3170	1570	104	43	28	4.0
MIN	4.1	12	45	34	85	149	197	60	19	7.3	2.2	1.2
CFSM	.04	.18	.85	.23	1.86	2.68	4.68	1.44	.21	.09	.04	.01
IN.	.05	.20	.98	.26	1.94	3.09	5.22	1.66	.24	.11	.05	.01

CAL YR 1982 TOTAL 74134.2 MEAN 203 MAX 3870 MIN 2.9 CFSM .97 IN 13.13
WTR YR 1983 TOTAL 77873.3 MEAN 213 MAX 4200 MIN 1.2 CFSM 1.01 IN 13.79

01632900 SMITH CREEK NEAR NEW MARKET, VA

LOCATION.--38°41'36", long 78°38'35", Shenandoah County, Hydrologic Unit 02070006, on left bank 25 ft upstream from bridge on State Highway 616, 3.6 mi north of New Market, and 4.4 mi upstream from mouth.

DRAINAGE AREA.--93.2 mi².

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 881.50 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 2, 1963, on right bank a short distance downstream, at datum 0.71 ft higher.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--23 years, 72.2 ft³/s, 10.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s Oct. 6, 1972, gage height, 16.38 ft, from rating curve extended above 2,300 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 4.5 ft³/s Feb. 9, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 1, 1959, reached a stage of 10.7 ft, discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	1300	1590	8.27	Apr. 15	2100	666	5.53
Apr. 3	0500	965	6.80	Apr. 24	1930	1540	8.19
Apr. 10	1230	1180	7.41	May 16	2330	*1640	8.36

Minimum discharge, 15 ft³/s Sept. 20, 21, 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	20	77	41	30	155	139	148	90	52	26	20
2	18	20	88	40	132	149	164	139	87	63	38	19
3	17	20	71	38	273	133	597	135	84	51	30	18
4	18	106	62	36	134	121	255	134	107	46	28	20
5	17	116	55	34	99	111	198	124	89	48	37	19
6	17	56	50	34	90	107	183	115	80	49	30	18
7	17	43	45	34	85	111	177	107	77	44	26	17
8	18	35	40	32	78	225	187	105	73	42	26	17
9	19	30	38	32	72	304	199	99	69	41	24	16
10	22	28	35	36	70	205	740	94	67	40	24	16
11	22	26	35	41	70	170	406	90	65	39	26	17
12	22	25	38	39	70	148	284	87	64	37	29	17
13	23	28	35	36	70	133	231	84	62	36	25	20
14	25	26	35	33	73	121	199	84	60	36	24	24
15	22	25	32	33	79	111	374	88	60	34	23	18
16	21	23	224	32	81	103	340	642	60	34	22	17
17	20	22	166	31	93	96	239	580	59	33	22	17
18	19	22	106	31	145	132	207	218	64	34	23	17
19	18	22	89	30	170	907	184	165	64	34	22	17
20	20	22	81	30	179	366	166	148	61	32	22	16
21	21	22	73	30	213	296	151	203	73	31	21	17
22	22	22	65	29	284	242	139	270	64	32	20	18
23	20	22	61	34	390	193	135	196	58	32	20	16
24	21	21	58	39	308	172	874	154	54	35	24	16
25	31	19	55	36	234	156	500	133	53	32	23	16
26	41	18	54	35	190	142	290	122	50	31	22	17
27	30	18	52	33	165	176	231	110	48	30	23	16
28	25	22	50	33	154	258	198	103	49	29	22	16
29	23	81	48	31	---	176	177	107	53	26	23	16
30	20	78	45	31	---	151	161	105	51	26	21	21
31	21	---	43	31	---	145	---	95	---	27	20	---
TOTAL	668	1038	2006	1055	4031	6015	8325	4984	1995	1156	766	529
MEAN	21.5	34.6	64.7	34.0	144	194	278	161	66.5	37.3	24.7	17.6
MAX	41	116	224	41	390	907	874	642	107	63	38	24
MIN	17	18	32	29	30	96	135	84	48	26	20	16
CFSM	.23	.37	.69	.37	1.55	2.08	2.98	1.73	.71	.40	.27	.19
IN.	.27	.41	.80	.42	1.61	2.40	3.32	1.99	.80	.46	.31	.21

CAL YR 1982 TOTAL 26950 MEAN 73.8 MAX 845 MIN 17 CFSM .79 IN 10.76
WTR YR 1983 TOTAL 32568 MEAN 89.2 MAX 907 MIN 16 CFSM .96 IN 13.00

01633000 NORTH FORK SHENANDOAH RIVER AT MOUNT JACKSON, VA

LOCATION.--Lat 38°44'43", long 78°38'21", Shenandoah County, Hydrologic Unit 02070006, on right bank at upstream side of bridge on State Highway 698 at Mount Jackson and 0.4 mi downstream from Mill Creek.

DRAINAGE AREA.--506 mi².

PERIOD OF RECORD.--October 1943 to current year.

REVISED RECORDS.--WSP 1382: 1945, 1948-50(M), 1951-53(P), 1954(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 838.55 ft National Geodetic Vertical Datum of 1929. Prior to July 1, 1976, nonrecording gage, and July 1, 1976, to Oct. 23, 1981, water-stage recorder, at site 400 ft upstream at same datum.

REMARKS.--Records good. Some diversion during low flow by irrigation at points above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 385 ft³/s, 10.33 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,500 ft³/s Oct. 6, 1972, gage height, 18.10 ft, from rating curve extended above 18,000 ft³/s on basis of peak runoff for flood in October 1942 for stations at Cootes Store and near Strasburg; minimum observed, 7.0 ft³/s Sept. 3, 1966, gage height, 1.97 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of 20.2 ft, from floodmarks, discharge, about 80,000 ft³/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	1130	7840	11.15	Apr. 24	1900	7370	10.82
Apr. 3	0700	5680	9.48	May 16	2230	5260	9.13
Apr. 15	2030	*8420	11.51				

Minimum discharge, 48 ft³/s Sept. 20-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	94	418	158	179	591	646	723	372	247	84	62
2	55	94	586	154	294	555	617	652	355	354	106	62
3	57	94	466	148	1930	505	4020	608	327	201	114	60
4	57	218	385	141	1220	466	2060	565	364	227	100	60
5	55	370	323	135	778	435	1320	520	323	201	132	60
6	55	208	284	135	586	418	1040	471	292	197	106	60
7	60	161	250	131	490	431	908	435	288	172	94	55
8	60	138	220	131	418	559	872	418	277	158	92	53
9	64	122	201	128	359	1240	896	401	258	148	81	53
10	71	112	183	135	335	1200	3600	376	246	144	76	53
11	71	106	175	151	273	950	3520	355	235	135	79	53
12	69	106	183	151	270	772	2090	339	227	128	89	53
13	76	109	161	141	270	646	1460	327	216	122	79	62
14	87	106	148	138	270	555	1140	323	208	116	79	69
15	79	100	148	138	284	495	3970	331	201	109	79	60
16	71	94	1270	135	351	444	4220	1860	201	109	74	55
17	69	89	1340	128	596	406	2090	3090	216	106	69	53
18	69	87	767	122	1190	456	1480	1440	224	103	69	50
19	66	84	545	112	1180	4840	1160	980	277	106	71	50
20	66	84	435	109	1090	2520	974	789	262	100	66	50
21	71	84	364	118	1060	2150	824	833	307	97	64	55
22	69	84	311	122	1250	2110	728	1380	254	103	62	55
23	69	81	277	131	1600	1380	662	1290	231	103	62	53
24	69	79	250	144	1570	1020	4150	1010	205	112	66	53
25	94	74	231	154	1160	824	4280	800	190	109	71	55
26	131	74	212	161	902	684	2140	674	179	100	66	55
27	112	71	201	165	718	700	1450	570	168	94	64	53
28	100	84	197	172	635	1400	1120	495	179	92	66	53
29	97	252	186	175	---	1060	938	471	183	89	79	53
30	94	440	175	179	---	830	818	448	175	87	69	69
31	92	---	165	183	---	728	---	397	---	84	64	---
TOTAL	2310	3899	11057	4425	21258	31370	55193	23371	7440	4253	2472	1687
MEAN	74.5	130	357	143	759	1012	1840	754	248	137	79.7	56.2
MAX	131	440	1340	183	1930	4840	4280	3090	372	354	132	69
MIN	55	71	148	109	179	406	617	323	168	84	62	50
CFSM	.15	.26	.71	.28	1.50	2.00	3.64	1.49	.49	.27	.16	.11
IN.	.17	.29	.81	.33	1.56	2.31	4.06	1.72	.55	.31	.18	.12

CAL YR 1982 TOTAL 155469 MEAN 426 MAX 4670 MIN 55 CFSM .84 IN 11.43
WTR YR 1983 TOTAL 168735 MEAN 462 MAX 4840 MIN 50 CFSM .91 IN 12.40

01634000 NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA

LOCATION.--Lat 38°58'36", long 78°20'11", Warren County, Hydrologic Unit 02070006, on right bank at downstream side of bridge on State Highway 55, 1.5 mi southeast of Strasburg, 2.2 mi upstream from Cedar Creek, and 10 mi upstream from confluence with South Fork.

DRAINAGE AREA.--768 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1925 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1001: 1931. WSP 1171: 1929(M), 1933(M), 1936-37. WSP 1302: 1928(M), 1930(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 494.03 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 21, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation at low and medium flow from unknown cause. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--58 years, 585 ft³/s, 10.34 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s Oct. 16, 1942, gage height, 31.2 ft, from high-water mark in well, from rating curve extended above 46,000 ft³/s; minimum, 6.0 ft³/s Feb. 9, 1934, gage height, 1.52 ft; minimum daily, 41 ft³/s Sept. 26, Oct. 1, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 20	0130	8310	10.84	Apr. 16	1015	*9860	12.04
Apr. 3	2030	7120	9.86	Apr. 25	0845	9360	11.66
Apr. 11	0130	6560	9.38	May 17	1230	6620	9.43

Minimum discharge, 70 ft³/s Oct. 5, gage height, 1.73 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	134	582	210	206	908	1170	1200	628	289	140	149
2	157	130	575	217	226	860	1070	1080	596	279	144	143
3	129	118	727	210	748	799	3760	986	564	486	141	140
4	139	152	582	200	2060	720	4240	922	530	320	185	132
5	109	186	482	187	1330	663	2420	858	549	296	189	117
6	129	480	410	193	940	617	1810	776	566	271	191	204
7	126	325	353	182	752	600	1570	710	610	275	214	151
8	131	234	315	177	633	666	1550	670	489	267	204	131
9	133	210	294	177	541	1020	1580	649	429	205	150	140
10	125	178	207	179	450	1690	3180	603	401	223	183	162
11	125	169	249	178	400	1480	5960	562	376	209	171	136
12	122	159	235	201	450	1220	3920	535	357	218	153	125
13	166	164	213	205	425	1010	2560	508	337	197	183	148
14	150	185	228	184	440	861	1960	488	320	190	144	144
15	132	137	186	185	415	756	2080	508	307	182	141	128
16	142	144	236	177	500	678	7620	915	297	176	151	128
17	135	158	1850	168	644	607	3910	4860	294	151	135	145
18	133	136	1500	165	1120	754	2550	2950	316	183	143	140
19	131	116	999	148	1780	2380	1980	1810	333	156	143	130
20	129	162	751	165	1710	5610	1630	1390	372	178	131	121
21	124	124	612	158	1600	2660	1400	1190	676	178	136	137
22	120	130	512	173	1720	3260	1210	1620	666	166	135	139
23	123	127	439	178	2010	2370	1090	2300	416	169	129	120
24	119	124	384	157	2310	1720	1960	1810	358	171	142	120
25	139	136	331	180	1910	1380	7760	1430	312	150	128	121
26	170	136	316	206	1520	1160	4140	1170	286	167	136	120
27	156	114	319	170	1210	1040	2540	1000	272	169	138	120
28	166	129	267	207	1000	1640	1920	860	295	137	140	117
29	145	209	271	172	---	1980	1580	782	302	137	142	116
30	136	308	251	211	---	1530	1360	752	298	139	136	134
31	132	---	248	209	---	1290	---	704	---	139	149	---
TOTAL	4193	5214	14924	5729	29050	43929	81480	36598	12552	6473	4747	4058
MEAN	135	174	481	185	1038	1417	2716	1181	418	209	153	135
MAX	170	480	1850	217	2310	5610	7760	4860	676	486	214	204
MIN	109	114	186	148	206	600	1070	488	272	137	128	116
CFSM	.18	.23	.63	.24	1.35	1.85	3.54	1.54	.54	.27	.20	.18
IN.	.20	.25	.72	.28	1.41	2.13	3.95	1.77	.61	.31	.23	.20

CAL YR 1982 TOTAL 227117 MEAN 622 MAX 7610 MIN 91 CFSM .81 IN 11.00
WTR YR 1983 TOTAL 248947 MEAN 682 MAX 7760 MIN 109 CFSM .89 IN 12.06

01634000 NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA.--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1949, 1952, 1956, 1970 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1955 to September 1956.
WATER TEMPERATURES: October 1948 to September 1949, October 1955 to September 1956.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
OCT 19...	0900	132	448	8.5	10.0	16	210	9	52	19	12	2.8
DEC 06...	1615	400	276	8.4	14.5	17	130	17	36	8.9	7.4	2.0
JAN 18...	0915	215	406	9.0	.0	3	190	18	50	15	12	1.9
MAR 15...	1030	761	255	8.3	8.5	15	120	14	33	8.2	4.2	1.4
MAY 23...	1330	2270	253	7.9	18.0	15	120	21	35	8.3	3.5	2.7
AUG 16...	1330	139	353	8.8	23.5	35	150	14	32	18	13	3.1

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)
OCT 19...	199	20	17	<.10	1.0	251	243	<.010	.58	.040	6
DEC 06...	110	18	10	<.10	3.9	172	160	.020	1.6	.090	13
JAN 18...	169	19	14	<.10	.1	233	222	.010	1.9	.060	8
MAR 15...	102	17	6.9	<.10	4.9	143	137	<.010	1.6	.050	15
MAY 23...	101	13	5.1	<.10	5.8	143	134	.020	1.4	--	50
AUG 16...	140	18	20	<.10	3.2	227	191	.010	<.10	.010	11

< Actual value is known to be less than the value shown.

01634500 CEDAR CREEK NEAR WINCHESTER, VA

LOCATION.--Lat 39°04'52", long 78°19'47", Frederick County, Hydrologic Unit 02070006, on left bank 0.2 mi upstream from Fawcett Run, 0.3 mi upstream from bridge on State Highway 628, 1.3 mi downstream from Froman Run, and 11.4 mi southwest of Winchester.

DRAINAGE AREA.--103 mi^2.

PERIOD OF RECORD.--June 1937 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 647.09 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, July 25 to Aug. 24, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years, 93.1 ft^3/s, 12.27 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft^3/s Oct. 15, 1942, gage height, 27.0 ft, from floodmarks, from rating curve extended above 15,000 ft^3/s; minimum, 1.8 ft^3/s Feb. 19, 1941, Dec. 7, 1958, result of freezeups; minimum daily, 2.8 ft^3/s Sept. 7, 1964, Sept. 3, 4, 7, 8, 1966; minimum gage height, 1.04 ft Feb. 19, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 17, 1936, reached a stage of about 25 ft, discharge, about 18,000 ft^3/s, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0530	2540	7.51	Apr. 24	1400	*3480	9.07
Apr. 3	0300	2260	7.05	May 16	1830	2720	7.80
Apr. 10	0830	2940	8.17	June 7	0030	1100	4.81
Apr. 15	1630	2090	6.74	June 21	1030	2420	7.31

Minimum discharge, 5.2 ft^3/s Sept. 10, 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	17	50	27	28	145	188	209	70	50	12	12
2	12	17	65	25	41	138	186	178	62	51	13	12
3	12	18	49	24	222	122	1190	160	55	36	17	9.2
4	11	66	42	22	135	109	443	150	56	33	26	9.7
5	11	73	36	20	97	104	320	121	48	36	30	8.7
6	12	32	33	20	85	99	269	105	103	30	20	7.7
7	12	24	28	22	79	120	317	93	346	26	16	7.2
8	12	21	25	21	71	227	510	95	128	24	14	6.2
9	12	18	24	20	61	408	744	93	87	23	13	6.2
10	13	16	21	25	58	267	2010	74	69	21	12	6.2
11	14	16	21	51	45	210	1120	65	58	19	12	6.2
12	14	16	23	46	50	172	558	60	48	18	15	5.7
13	16	18	21	37	60	142	384	55	39	18	12	12
14	22	22	21	35	70	124	311	53	33	16	11	21
15	18	19	21	33	90	109	1060	74	29	15	11	12
16	16	18	142	30	160	97	796	990	25	14	11	8.7
17	16	18	117	26	190	87	470	808	30	13	10	8.7
18	16	18	79	23	340	285	356	362	29	13	10	7.7
19	15	18	65	21	386	1720	293	263	26	13	9.7	7.2
20	16	18	58	20	362	582	245	236	25	14	9.7	7.2
21	17	19	48	23	351	504	203	212	650	14	9.0	9.7
22	17	21	40	28	424	390	175	274	227	15	9.0	20
23	16	23	40	35	432	296	160	396	114	13	9.0	12
24	16	22	41	49	348	245	2100	254	79	13	9.6	8.7
25	20	21	38	42	264	206	1720	195	62	13	12	8.7
26	32	20	36	36	210	170	638	162	50	13	9.7	8.7
27	25	18	33	32	170	221	412	130	44	13	9.7	9.7
28	21	21	33	30	155	374	323	107	40	13	9.2	8.7
29	18	98	33	29	---	278	272	105	62	12	12	8.7
30	18	61	29	28	---	224	233	97	60	12	12	37
31	17	---	28	28	---	203	---	79	---	12	8.7	---
TOTAL	499	807	1340	908	4984	8378	18006	6255	2754	626	394.3	313.4
MEAN	16.1	26.9	43.2	29.3	178	270	600	202	91.8	20.2	12.7	10.4
MAX	32	98	142	51	432	1720	2100	990	650	51	30	37
MIN	11	16	21	20	28	87	160	53	25	12	8.7	5.7
CFSM	.16	.26	.42	.28	1.73	2.62	5.83	1.96	.89	.20	.12	.10
IN.	.18	.29	.48	.33	1.80	3.03	6.50	2.26	.99	.23	.14	.11

CAL YR 1982 TOTAL 43287.0 MEAN 119 MAX 2510 MIN 10 CFSM 1.16 IN 15.63
WTR YR 1983 TOTAL 45264.7 MEAN 124 MAX 2100 MIN 5.7 CFSM 1.20 IN 16.35

01635500 PASSAGE CREEK NEAR BUCKTON, VA

LOCATION.--Lat 38°57'29", long 78°16'01", Warren County, Hydrologic Unit 02070006, on right bank 350 ft upstream from bridge on State Highway 55, 1.2 mi south of Buckton railroad station, 1.4 mi upstream from mouth, and 4.2 mi west of Riverton.

DRAINAGE AREA.--87.8 mi².

PERIOD OF RECORD.--October 1905 to July 1906 (gage heights only), April 1932 to current year. Prior to October 1966, published as "at Buckton."

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 525.14 ft National Geodetic Vertical Datum of 1929. October 1905 to July 1906, nonrecording gage at site 1 mi downstream at different datum. Apr. 4, 1932, to Oct. 7, 1937, nonrecording gage at site 350 ft downstream at different datum.

REMARKS.--Records good. Occasional diurnal fluctuation during low flow caused by State Fish Hatchery 2 mi above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--51 years, 68.5 ft³/s, 10.59 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s Oct. 15, 1942, gage height, 15.5 ft, from high-water mark in well, from rating curve extended above 5,200 ft³/s; minimum observed, 0.1 ft³/s Aug. 5, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	1100	1580	6.94	Apr. 24	2100	1410	6.67
Apr. 3	1100	1350	6.58	May 17	0330	*2330	8.01
Apr. 10	1500	1280	6.48	June 21	1700	1420	6.70
Apr. 15	2200	1130	6.25				

Minimum discharge, 1.9 ft³/s Sept. 12, gage height, 2.86 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	8.3	63	22	20	153	132	132	63	27	5.0	3.6
2	5.8	8.0	100	22	24	153	123	118	61	24	5.2	3.3
3	5.2	8.0	67	21	232	132	856	107	52	20	4.6	3.0
4	5.2	16	52	20	123	116	360	100	52	16	7.6	3.3
5	4.6	102	43	18	86	107	244	86	46	14	6.5	3.0
6	4.2	39	38	17	72	96	201	74	53	14	7.1	3.2
7	4.2	24	32	19	71	98	186	67	60	12	6.2	2.8
8	4.6	19	27	18	65	109	216	65	39	11	6.9	2.7
9	5.4	16	23	17	55	240	224	67	32	10	6.2	2.2
10	6.5	15	22	21	55	169	913	55	28	10	6.9	2.0
11	6.9	14	21	28	54	140	608	47	24	13	6.0	2.0
12	7.6	13	23	28	58	120	348	42	21	9.7	6.9	2.0
13	8.0	13	19	23	65	107	260	37	18	7.3	7.3	5.6
14	10	16	19	21	80	96	205	35	17	6.7	6.7	9.1
15	12	15	21	20	94	90	535	43	16	6.2	5.4	7.8
16	8.8	13	196	19	150	80	618	696	15	5.8	4.4	5.4
17	6.9	12	158	17	250	72	320	1230	16	5.2	3.8	4.0
18	6.5	12	92	15	280	275	244	332	19	4.6	4.0	3.3
19	7.3	12	71	14	284	1320	201	220	26	5.0	4.0	4.2
20	6.2	12	61	15	296	510	163	182	23	8.8	3.8	4.0
21	6.2	12	53	16	312	348	140	176	504	5.6	3.2	4.2
22	6.2	13	44	18	430	276	123	356	245	5.0	2.7	5.0
23	6.2	14	40	19	565	201	114	372	107	4.8	2.7	4.4
24	6.7	11	38	26	455	163	749	209	69	5.2	2.7	4.2
25	9.4	10	34	28	300	142	810	156	50	5.0	3.0	4.6
26	37	10	33	23	232	123	360	128	37	4.6	4.0	3.8
27	22	10	30	23	176	132	256	109	28	4.6	3.8	3.6
28	14	12	30	22	153	272	201	90	25	4.0	3.3	3.8
29	11	106	29	19	---	179	169	90	29	3.5	3.0	3.6
30	9.4	82	26	20	---	148	148	84	33	3.0	3.3	5.4
31	8.6	---	23	22	---	138	---	71	---	4.0	3.5	---
TOTAL	268.6	667.3	1528	631	5037	6305	10027	5576	1808	279.6	149.7	119.1
MEAN	8.66	22.2	49.3	20.4	180	203	334	180	60.3	9.02	4.83	3.97
MAX	37	106	196	28	565	1320	913	1230	504	27	7.6	9.1
MIN	4.2	8.0	19	14	20	72	114	35	15	3.0	2.7	2.0
CFSM	.10	.25	.56	.23	2.05	2.31	3.80	2.05	.69	.10	.06	.05
IN.	.11	.28	.65	.27	2.13	2.67	4.25	2.36	.77	.12	.06	.05

CAL YR 1982 TOTAL 25333.0 MEAN 69.4 MAX 1020 MIN 2.5 CFSM .79 IN 10.73
WTR YR 1983 TOTAL 32396.3 MEAN 88.8 MAX 1320 MIN 2.0 CFSM 1.01 IN 13.73

01636500 SHENANDOAH RIVER AT MILLVILLE, WV
(National stream-quality accounting network station)

LOCATION.--Lat 39°16'55", long 77°47'22", Jefferson County, Hydrologic Unit 02070007, on left bank 0.4 mi downstream from Cattail Run, 1.0 mi upstream from Millville, 5.0 mi upstream from Harpers Ferry, and at mile 5.0.

DRAINAGE AREA.--3,040 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1895 to March 1909, August 1928 to current year.

REVISED RECORDS.--WSP 951: 1936(M). WSP 1432: Drainage area at former site, 1895-99, 1901-2, 1905, 1907-8, 1932(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 293.00 ft National Geodetic Vertical Datum of 1929. Apr. 15, 1895, to Mar. 31, 1909, nonrecording gage at site 0.8 mi downstream at datum 0.32 ft higher.

REMARKS.--Records good except those for January and February, which are fair. Regulation by hydroelectric plants, particularly that of Potomac Light and Power Co., 0.5 mi upstream from station. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--68 years (water years 1896-1908, 1929-83), 2,686 ft^3/s, 12.00 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 230,000 ft^3/s Oct. 16, 1942, gage height, 32.4 ft, from floodmarks; minimum, about 59 ft^3/s Oct. 4, 1930, gage height, 0.39 ft; minimum daily, 194 ft^3/s July 24, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1870 reached practically same stage as flood of Mar. 18, 1936, 26.36 ft, discharge, 151,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 15,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 20	1500	*35700	12.95	Apr. 17	0145	23700	10.59
Apr. 4	1400	22500	10.33	Apr. 25	2300	32500	12.37
Apr. 11	1745	27800	11.47	May 18	0100	17600	9.14

Minimum discharge, 357 ft^3/s Oct. 11, gage height, 1.17 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	748	2030	1370	1280	4930	5210	6270	3300	1720	695	610
2	748	738	3260	1350	1300	4660	4930	5580	3030	1540	680	748
3	702	718	3140	1240	1910	4510	7580	5100	2790	1560	702	718
4	652	754	3280	1200	5040	4260	18800	4740	2620	1750	725	645
5	673	1250	2710	1140	7020	3960	14500	4380	2580	1740	771	624
6	604	1400	2380	1140	5380	3730	9880	4030	2710	1520	886	652
7	624	1690	2110	1110	4300	3660	7990	3660	3530	1490	811	617
8	571	1640	1820	1120	3660	3710	7360	3390	3050	1370	795	631
9	590	1150	1700	1030	3150	4660	7340	3280	2420	1370	878	584
10	624	1060	1600	1120	2760	6900	12200	3080	2160	1210	860	533
11	680	951	1320	1320	2200	7380	23100	2890	2070	1140	827	552
12	680	973	1400	1430	1940	6360	21100	2680	1920	1120	860	558
13	666	839	1360	1340	1700	5440	13600	2540	1820	1080	779	564
14	695	878	1370	1430	1800	4740	10200	2460	1750	1060	779	604
15	748	860	1330	1280	2050	4200	8820	2490	1630	992	779	645
16	673	886	1350	1200	2350	3750	15900	3170	1700	983	819	631
17	673	819	2180	1200	2650	3350	20100	12300	1610	938	811	624
18	638	803	6990	1110	2960	3350	13500	15000	1740	903	638	610
19	666	811	5960	1000	4810	11300	10200	9360	1790	894	673	597
20	638	771	4510	903	5960	29400	8240	6970	1860	878	680	578
21	680	771	3600	870	6060	18800	7020	5840	2220	929	680	578
22	718	811	3010	920	6500	12700	6100	5800	6430	819	533	597
23	604	771	2580	1000	7700	11400	5380	8950	3960	835	695	604
24	571	802	2260	1100	9030	8790	7480	8390	2820	779	710	624
25	695	763	1960	1200	10000	7180	22800	6790	2310	819	631	564
26	740	771	1860	1220	8040	6100	25800	5720	2000	878	564	527
27	929	755	1760	1310	6680	5440	15100	4960	1800	787	558	527
28	944	771	1690	1250	5540	5420	10800	4360	1680	819	604	578
29	1040	869	1580	1240	---	6500	8600	3860	1740	787	624	558
30	929	1330	1480	1230	---	6460	7220	3590	1700	748	624	558
31	787	---	1440	1290	---	5680	---	3460	---	673	604	---
TOTAL	22192	28153	75020	36663	123770	218720	356850	165090	72740	34131	22275	18040
MEAN	716	938	2420	1183	4420	7055	11900	5325	2425	1101	719	601
MAX	1040	1690	6990	1430	10000	29400	25800	15000	6430	1750	886	748
MIN	571	718	1320	870	1280	3350	4930	2460	1610	673	533	527
CFSM	.24	.31	.80	.39	1.45	2.32	3.91	1.75	.80	.36	.24	.20
IN.	.27	.34	.92	.45	1.51	2.68	4.37	2.02	.89	.42	.27	.22

CAL YR 1982 TOTAL 976809 MEAN 2676 MAX 25400 MIN 562 CFSM .88 IN 11.95
WTR YR 1983 TOTAL 1173644 MEAN 3215 MAX 29400 MIN 527 CFSM 1.06 IN 14.36

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-63, 1965, 1969-71, 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1980 to September 1983.
WATER TEMPERATURES: October 1980 to September 1983.

INSTRUMENTATION.--Water-quality monitor October 1980 to September 1983.

REMARKS.--Periods of missing record due to instrument malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (water years 1981-82): Maximum, 778 micromhos Dec. 29, 1980; minimum, 212 micromhos Jan. 17, 1982.
WATER TEMPERATURES: Maximum 30.0°C July 20, 21, 1981; minimum, 0.0°C on many days in winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 29.5°C July 31, Aug. 8; minimum, 0.0°C Jan. 18-20, 22-25.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
NOV 30...	1100	1380	450	8.7	9.5	8.5	757	2.0	11.7	101
FEB 08...	1130	3640	200	7.6	1.0	3.0	753	6.6	13.5	102
APR 19...	1115	10700	192	8.3	3.5	8.5	--	25	17.4	--
MAY 24...	1130	8390	230	8.2	17.0	17.0	756	20	9.0	94
JUL 18...	1130	983	420	8.5	24.0	27.5	--	3.9	7.3	--
SEP 12...	0930	558	525	8.2	24.0	24.0	750	4.8	7.4	90

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
NOV 30...	20	620	170	16	45	13	28	26	1.0	2.6
FEB 08...	27	--	73	15	21	5.0	7.8	18	.4	1.6
APR 19...	390	790	81	14	23	5.6	4.6	11	.2	1.4
MAY 24...	1100	1500	99	15	28	7.1	5.8	11	.3	1.9
JUL 18...	32	170	160	35	41	15	24	24	.8	2.8
SEP 12...	K14	2800	180	30	47	16	37	30	1.2	2.4

K Result based on colony count outside optimal range.

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ALKALINITY LAB (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)
NOV 30...	150	.6	59	22	.10	.5	269	261	.37	1000
FEB 08...	58	2.8	24	5.6	<.10	5.6	113	106	.15	1110
APR 19...	67	.6	18	4.6	<.10	7.3	117	105	.16	3250
MAY 24...	84	1.0	16	4.4	<.10	6.7	126	121	.17	2850
JUL 18...	129	.8	58	16	.20	5.8	272	240	.37	722
SEP 12...	154	2.1	78	24	.20	3.6	318	301	.43	479

< Actual value is known to be less than the value shown.

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS TOTAL (MG/L AS PO4)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
NOV 30...	.72	.090	.12	.50	.090	.28	.080	.070	.21
FEB 08...	.96	.050	.06	1.50	.500	1.5	.070	.060	.18
APR 19...	1.1	.050	.06	.50	.100	.31	.040	.040	.12
MAY 24...	1.1	.050	.06	.70	.120	.37	.060	.060	.18
JUL 18...	.77	.020	.03	.90	.070	.21	.050	<.010	--
SEP 12...	.76	.060	.08	1.20	.140	.43	.120	.120	.37

< Actual value is known to be less than the value shown.

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
NOV 30...	<10	4	41	<1	<1	--	<3	8	13	1
APR 19...	30	1	32	<1	<1	<1	<3	2	47	4
MAY 24...	60	1	40	1	1	<1	3	5	48	<1
SEP 12...	20	3	50	1	<1	<1	<3	1	<3	<1

< Actual value is known to be less than the value shown.

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV 30...	16	5	.6	<10	<1	<1	<1	160	<6.0	55
APR 19...	<4	3	.1	<10	2	<1	<1	71	<6.0	16
MAY 24...	4	3	<.1	10	<1	<1	<1	90	6.0	6
SEP 12...	10	9	<.1	20	1	<1	<1	190	<6.0	<3

< Actual value is known to be less than the value shown.

DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	DATE	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 30...	5	19	77	MAY 24...	60	--	94
FEB 08...	13	128	81	JUL 18...	13	--	96
APR 19...	54	--	96	SEP 12...	11	17	78

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), OCTOBER 1982 TO FEBRUARY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	476	451	467	439	426	433	442	425	434	338	326	332
2	462	445	449	426	418	422	429	359	382	342	331	336
3	452	447	449	437	423	429	371	359	366	344	334	340
4	475	449	471	441	436	439	362	336	346	351	335	345
5	467	460	462	442	435	438	335	325	320	352	345	349
6	480	461	471	440	434	437	325	292	310	359	345	353
7	502	482	492	445	415	428	292	286	290	370	357	364
8	522	503	512	431	373	395	302	288	300	377	359	366
9	526	522	524	387	374	383	304	289	302	381	374	377
10	520	512	517	391	387	389	309	298	304	383	376	378
11	523	511	515	395	387	390	313	301	310	387	379	383
12	525	514	521	407	395	401	325	308	318	382	376	378
13	513	497	504	426	405	416	328	318	321	375	368	371
14	520	497	508	427	423	426	336	328	333	383	368	376
15	522	487	509	428	420	424	351	335	346	375	371	374
16	496	483	487	419	411	414	349	344	346	387	369	377
17	500	495	498	420	412	415	346	339	340	386	370	377
18	507	495	502	424	420	421	340	288	310	398	383	391
19	510	506	509	422	417	420	293	267	276	399	392	395
20	507	495	502	422	417	419	268	227	241	402	392	395
21	503	494	498	420	415	418	227	207	214	408	401	404
22	505	499	504	417	409	413	213	208	210	411	401	404
23	497	490	493	424	414	418	226	214	221	436	400	412
24	496	489	492	442	424	434	246	226	233	436	400	420
25	499	487	494	448	443	445	249	238	241	411	389	401
26	488	476	480	446	432	437	260	251	255	423	406	412
27	476	464	469	459	433	445	274	256	268	419	402	409
28	480	466	472	478	457	469	286	276	281	402	389	393
29	487	475	481	477	437	458	294	286	290	394	383	389
30	485	457	470	440	422	432	317	293	306	397	282	391
31	457	439	447	---	---	---	326	310	318	402	396	399
MONTH	526	439	489	478	373	424	442	207	301	436	282	380

DAY	MAX	MIN	MEAN
		FEBRUARY	
1	402	393	399
2	393	378	389
3	405	367	389
4	368	296	347
5	289	255	272
6	249	217	225
7	218	202	208
8	207	194	198
9	196	192	194
10	206	196	201
11	214	206	210
12	236	215	226
13	242	230	235
14	265	240	250
15	280	265	270
16	293	281	287
17	296	288	292
18	294	289	292
19	288	274	279
20	275	264	269
21	264	252	258
22	261	251	257
23	254	240	252
24	246	237	243
25	---	---	---
26	---	---	---
27	---	---	---
28	---	---	---
29	---	---	---
30	---	---	---
31	---	---	---
MONTH	405	192	268

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.0	18.5	18.5	15.0	13.5	14.0	10.0	9.5	9.5	6.0	5.5	6.0
2	19.5	18.5	19.0	16.0	14.5	15.5	10.5	9.5	10.0	6.0	5.5	5.5
3	20.0	18.5	19.5	17.0	16.0	16.5	11.5	10.5	11.0	5.5	5.0	5.5
4	21.5	19.5	21.0	17.0	16.5	17.0	13.0	11.5	12.0	5.0	4.0	4.5
5	22.0	20.5	21.5	16.5	13.0	15.0	13.5	12.5	13.0	4.0	3.5	3.5
6	22.0	21.5	21.5	13.0	11.5	12.0	14.0	13.5	14.0	3.5	3.0	3.5
7	22.0	21.0	21.5	11.5	10.5	11.0	13.5	12.0	13.0	4.0	3.0	3.5
8	23.0	21.0	22.0	11.0	10.0	10.5	12.0	10.5	11.0	4.0	3.5	4.0
9	22.5	22.0	22.0	11.0	10.5	11.0	10.5	9.0	9.5	3.5	3.5	3.5
10	22.0	20.0	21.0	11.0	11.0	11.0	8.5	7.0	7.5	4.0	3.5	3.5
11	19.5	17.5	18.0	11.0	10.5	11.0	7.0	6.0	6.5	4.5	4.0	4.0
12	18.0	17.0	17.5	12.5	11.0	11.5	6.0	4.5	5.5	4.5	4.0	4.5
13	18.0	17.5	17.5	12.5	11.0	12.0	4.5	3.0	3.5	3.5	3.0	3.0
14	17.0	16.5	17.0	11.0	9.5	10.0	3.0	2.5	2.5	3.0	2.5	3.0
15	17.0	16.0	16.5	9.5	8.0	9.0	3.0	2.0	2.5	3.0	3.0	3.0
16	16.5	15.0	16.0	8.0	7.0	7.5	5.0	3.0	4.0	3.0	2.5	3.0
17	15.0	13.5	14.0	7.0	6.5	7.0	5.0	4.0	4.5	2.5	1.5	2.0
18	13.5	12.5	13.0	7.5	6.5	7.0	4.5	3.0	3.5	1.5	.0	.5
19	13.5	12.5	13.0	8.0	7.5	8.0	3.5	3.5	3.5	.5	.0	.0
20	14.5	13.0	14.0	9.0	8.0	8.5	3.5	3.5	3.5	.5	.0	.5
21	15.0	14.5	15.0	10.0	9.0	9.5	3.5	3.0	3.5	.5	.5	.5
22	14.5	13.5	14.0	11.0	10.0	10.5	4.0	3.0	3.5	.5	.0	.0
23	13.5	12.5	13.0	12.0	11.0	11.5	4.0	3.5	3.5	.5	.0	.0
24	12.5	11.0	11.5	12.5	11.5	12.0	4.5	4.0	4.0	.5	.0	.0
25	11.0	10.0	10.5	11.0	9.5	10.5	5.5	4.0	5.0	.5	.0	.5
26	10.5	9.5	10.0	9.5	8.5	9.0	7.5	5.5	6.5	1.5	.5	1.0
27	11.0	10.0	10.5	8.5	8.5	8.5	7.5	7.0	7.5	2.0	1.5	1.5
28	12.0	11.0	11.5	8.5	7.0	7.5	9.5	7.5	8.5	2.5	2.0	2.0
29	12.0	11.5	12.0	8.0	7.0	7.5	10.0	9.5	9.5	2.5	2.0	2.5
30	12.5	12.0	12.5	9.5	8.0	9.0	9.0	7.5	8.0	3.0	2.5	2.5
31	13.5	12.5	13.0	---	---	---	7.5	6.0	6.5	3.5	3.0	3.0
MONTH	23.0	9.5	16.0	17.0	6.5	10.5	14.0	2.0	7.0	6.0	.0	2.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4.0	3.5	3.5	7.0	6.0	6.5	10.0	8.0	9.0	18.0	17.0	17.5
2	5.0	4.0	4.5	8.5	6.5	7.5	9.5	8.5	9.0	19.0	18.0	18.5
3	5.5	5.0	5.5	9.0	7.5	8.0	10.0	8.5	9.5	19.0	18.5	19.0
4	5.0	4.0	4.0	9.5	8.0	9.0	10.0	9.0	9.5	19.0	18.0	18.5
5	4.5	3.5	4.0	11.0	9.0	10.0	10.5	9.5	10.0	18.0	17.0	17.5
6	4.0	3.0	3.5	10.5	10.0	10.5	10.5	9.5	10.0	18.5	16.5	17.5
7	3.5	3.0	3.5	11.5	10.0	10.5	11.0	10.0	10.5	19.0	16.5	17.5
8	4.5	4.0	4.0	11.0	10.0	10.5	11.5	11.0	11.0	18.5	17.5	18.0
9	4.0	3.5	3.5	10.5	10.0	10.0	11.5	11.0	11.5	17.5	16.0	17.0
10	4.0	3.5	3.5	10.0	9.5	10.0	11.5	10.5	11.0	17.5	16.0	17.0
11	3.5	1.0	2.0	9.5	9.0	9.5	11.5	10.5	11.0	18.0	16.0	17.0
12	1.0	1.0	1.0	9.0	7.5	8.0	11.0	10.5	11.0	18.5	17.0	18.0
13	1.0	1.0	1.0	8.5	7.0	8.0	11.5	10.0	11.0	20.0	18.0	19.0
14	1.0	1.0	1.0	8.5	8.0	8.0	11.5	10.0	11.0	20.5	19.0	19.5
15	1.0	1.0	1.0	10.5	8.0	9.5	11.5	11.5	11.5	21.0	20.0	20.5
16	1.0	.5	1.0	10.5	9.5	10.0	12.0	11.0	11.5	20.5	17.5	19.0
17	1.0	.5	1.0	10.0	9.0	9.5	11.5	10.5	11.0	17.5	15.0	16.5
18	4.0	1.0	3.0	10.0	8.5	9.0	10.5	9.5	10.0	16.0	14.5	15.5
19	4.5	3.0	3.5	10.0	9.5	9.5	10.0	9.0	9.0	15.5	15.0	15.0
20	5.5	3.5	4.5	9.5	9.0	9.5	9.0	8.0	8.5	17.5	15.0	16.5
21	6.5	5.5	6.0	10.5	9.0	10.0	10.0	8.0	9.0	17.5	17.0	17.5
22	7.5	6.5	7.0	10.0	8.5	9.5	11.5	9.5	10.5	18.0	17.5	18.0
23	7.5	7.0	7.0	9.0	8.0	8.5	12.0	11.0	11.5	18.0	17.5	17.5
24	7.5	6.5	7.0	8.5	7.5	7.5	12.0	11.0	11.5	17.5	17.0	17.5
25	7.0	6.5	7.0	7.5	6.5	7.0	11.0	10.0	10.0	18.5	16.5	17.5
26	7.0	6.0	6.5	7.5	6.0	7.0	11.0	10.0	10.5	18.0	17.5	17.5
27	6.0	5.0	5.5	7.0	6.5	7.0	13.0	10.5	11.5	18.5	17.0	17.5
28	6.0	5.5	6.0	8.5	6.5	7.5	15.5	12.5	14.0	18.0	17.0	17.5
29	---	---	---	8.0	7.5	8.0	16.5	15.0	15.5	17.5	16.5	17.0
30	---	---	---	8.5	7.5	8.0	17.5	16.0	17.0	19.0	16.5	17.5
31	---	---	---	8.0	8.0	8.0	---	---	---	18.5	17.5	18.0
MONTH	7.5	.5	4.0	11.5	6.0	8.5	17.5	8.0	11.0	21.0	14.5	17.5

01636500 SHENANDOAH RIVER AT MILLVILLE, WV--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.0	17.0	17.5	23.5	21.0	22.0	28.5	28.0	28.0	24.5	23.5	24.0
2	18.5	16.5	17.5	25.0	23.0	24.0	29.0	27.0	28.0	24.5	23.5	24.0
3	18.5	18.0	18.5	26.5	24.5	25.5	29.0	27.5	28.0	24.5	23.0	23.5
4	19.0	18.0	18.5	26.5	25.5	26.0	28.5	27.5	28.0	24.0	23.0	23.5
5	20.5	18.5	19.5	26.5	25.0	25.5	28.5	27.5	28.0	24.5	22.5	23.5
6	21.5	20.0	20.5	24.5	23.5	23.5	28.5	27.5	28.0	25.5	23.5	24.5
7	21.0	20.0	20.5	23.5	22.0	23.0	29.0	27.5	28.5	25.5	24.5	25.0
8	22.0	20.0	21.0	23.5	22.0	23.0	29.5	28.0	28.5	25.0	23.5	24.5
9	21.0	20.0	20.5	24.0	23.0	23.5	29.0	28.0	28.5	24.5	23.0	24.0
10	22.0	19.0	20.5	24.5	23.0	23.5	28.5	27.5	28.0	24.5	22.5	24.0
11	23.5	20.5	22.0	24.0	22.5	23.5	28.0	26.5	27.0	24.5	23.0	24.0
12	24.5	22.0	23.5	24.5	23.0	23.5	26.0	24.0	25.0	24.5	23.5	24.0
13	25.5	23.0	24.0	25.5	24.0	24.5	24.0	22.5	23.0	24.0	22.5	23.0
14	26.0	23.5	24.5	25.5	24.5	25.0	23.5	22.0	22.5	22.5	21.0	21.5
15	26.0	24.5	25.5	26.5	24.5	25.5	24.0	22.5	23.0	20.5	19.5	20.5
16	26.5	25.0	25.5	26.5	25.5	26.0	25.0	23.0	24.0	19.5	18.5	19.0
17	26.5	25.0	26.0	27.0	25.5	26.0	26.0	24.0	25.0	19.5	18.0	18.5
18	26.0	24.5	25.0	27.0	25.5	26.5	26.0	25.0	25.5	20.0	18.0	19.0
19	25.0	23.5	24.0	27.0	26.5	27.0	27.5	25.0	26.0	21.0	19.0	20.0
20	24.5	23.5	24.0	27.5	26.5	27.0	28.0	26.0	27.0	22.0	20.0	21.0
21	24.0	21.5	22.5	28.0	26.5	27.0	28.0	26.5	27.0	21.5	20.5	21.0
22	23.0	20.5	21.5	27.5	26.5	27.0	28.5	26.0	27.0	20.0	18.0	19.0
23	22.0	19.5	20.5	27.0	25.5	26.0	27.5	25.5	26.5	17.5	15.5	16.5
24	23.5	20.5	22.0	26.5	25.5	26.0	25.5	25.0	25.5	15.5	14.0	14.5
25	24.0	22.5	23.0	26.5	25.5	26.0	26.0	24.0	25.0	15.0	13.5	14.0
26	24.5	22.5	23.5	26.0	25.0	25.5	26.5	24.0	25.0	15.0	13.5	14.5
27	26.0	23.0	24.5	27.0	25.5	26.5	26.5	25.0	25.5	15.5	13.5	14.5
28	26.0	24.5	25.5	27.5	26.0	27.0	26.5	25.5	26.0	16.0	14.5	15.5
29	25.5	23.5	24.0	27.5	27.0	27.0	26.5	25.5	26.0	16.0	15.0	15.5
30	23.0	21.5	22.0	29.0	27.0	28.0	27.0	25.5	26.0	15.5	15.0	15.5
31	---	---	---	29.5	27.5	28.5	26.0	24.5	25.0	---	---	---
MONTH	26.5	16.5	22.5	29.5	21.0	25.5	29.5	22.0	26.5	25.5	13.5	20.5
YEAR	29.5	.0	14.5									

01638480 CATOCTIN CREEK AT TAYLORSTOWN, VA

LOCATION.--Lat 39°15'16", long 77°34'36", Loudoun County, Hydrologic Unit 02070008, on right bank at upstream side of bridge on State Highway 663 at Taylorstown and 3.2 mi downstream from Milltown Creek.

DRAINAGE AREA.--89.6 mi².

PERIOD OF RECORD.--August 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 249.15 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--12 years, 107 ft³/s, 16.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft³/s June 22, 1972, gage height, 23.83 ft, from floodmarks, from rating curve extended above 7,400 ft³/s on basis of contracted-opening measurement of peak flow; minimum daily, 1.9 ft³/s Sept. 14-17, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 8	0600	2280	7.01	Apr. 15	1900	1720	5.80
Mar. 19	0330	1240	4.72	Apr. 24	1230	3070	8.58
Apr. 3	0330	1400	5.08	May 16	1830	1700	5.75
Apr. 10	0630	*4440	10.77				

Minimum discharge, 3.6 ft³/s Sept. 11-12, 20-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	13	66	34	38	191	149	191	119	63	8.5	7.2
2	10	12	70	33	80	219	151	180	112	59	8.5	7.2
3	9.9	12	57	33	213	180	789	171	106	56	8.5	7.2
4	8.8	119	51	31	114	157	280	168	112	52	13	6.4
5	8.8	153	46	30	83	146	215	151	107	69	16	5.9
6	8.8	49	43	31	78	136	195	138	100	53	16	5.1
7	8.8	32	36	31	76	169	202	130	257	42	16	4.9
8	9.4	27	32	30	73	1130	316	132	110	37	9.3	4.3
9	9.9	24	30	29	62	586	465	144	92	36	8.0	3.9
10	9.9	21	29	45	60	370	2810	119	84	34	5.9	3.8
11	9.9	19	28	143	38	272	612	112	80	32	35	3.6
12	9.9	19	30	80	38	219	395	106	74	28	69	3.6
13	13	32	29	60	38	191	298	101	70	27	22	4.7
14	21	30	29	53	45	174	254	98	67	26	13	8.5
15	19	23	28	51	60	162	789	183	63	25	8.9	8.5
16	14	21	187	49	80	149	597	797	60	23	8.0	5.1
17	10	19	126	41	110	141	339	508	59	23	7.6	4.5
18	9.9	19	73	34	132	527	283	225	142	19	8.0	4.1
19	9.4	18	62	32	168	856	242	186	101	19	8.9	3.9
20	9.9	18	57	31	168	345	223	198	197	18	7.6	3.8
21	11	19	52	31	171	313	200	195	305	17	5.5	4.7
22	11	19	46	31	215	244	185	390	130	15	4.7	18
23	11	19	44	49	351	200	174	494	95	13	28	10
24	11	19	46	73	360	183	1720	230	80	14	63	5.5
25	27	17	43	53	283	171	936	191	70	15	22	4.7
26	100	16	42	47	244	156	440	176	63	14	14	4.3
27	38	16	40	44	195	214	324	161	60	14	10	4.1
28	23	19	41	42	186	296	270	144	59	12	8.5	4.1
29	18	255	42	40	---	186	230	144	95	10	8.0	4.0
30	15	96	38	38	---	166	209	146	74	8.9	7.6	5.9
31	14	---	34	40	---	157	---	130	---	8.5	6.8	---
TOTAL	501.3	1175	1577	1389	3759	8606	14292	6439	3143	882.4	475.8	171.5
MEAN	16.2	39.2	50.9	44.8	134	278	476	208	105	28.5	15.3	5.72
MAX	100	255	187	143	360	1130	2810	797	305	69	69	18
MIN	8.8	12	28	29	38	136	149	98	59	8.5	4.7	3.6
CFSM	.18	.44	.57	.50	1.50	3.10	5.31	2.32	1.17	.32	.17	.06
IN.	.21	.49	.65	.58	1.56	3.57	5.93	2.67	1.30	.37	.20	.07

CAL YR 1982 TOTAL 30366.8 MEAN 83.2 MAX 1310 MIN 4.6 CFSM .93 IN 12.61
WTR YR 1983 TOTAL 42411.0 MEAN 116 MAX 2810 MIN 3.6 CFSM 1.30 IN 17.61

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD

LOCATION.--Lat 39°16'25", long 77°32'35", Frederick County, Hydrologic Unit 02070008, on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, 0.3 mi downstream from Catoctin Creek (Virginia), 6 mi upstream from Monocacy River, and at mile 159.5.
DRAINAGE AREA.--9,651 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1895 to current year.
REVISED RECORDS.--WSP 192: 1895-1905. WSP 1432: 1899, 1901-2, 1904-5, 1912, 1914(M), 1915, 1917(M), 1918, 1919(M), 1920, 1921-23(M), 1924, 1925-28(M), 1930(M).
GAGE.--Water-stage recorder. Datum of gage is 200.63 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1929, nonrecording gage at same site. Prior to Sept. 2, 1902, at datum about 0.45 ft higher.
REMARKS.--Records good. Low flow affected slightly since 1913 by Stony River Reservoir, since December 1950 by Savage River Reservoir, and since July 1981, by Bloomington Reservoir. Low flow affected extensively at times by run-of-the-river hydroelectric plants. Gage-height telemeter at station.
AVERAGE DISCHARGE.--88 years, 9,360 ft³/s, 13.17 in/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft³/s Mar. 19, 1936, gage height, 41.03 ft, from rating curve extended above 300,000 ft³/s on the basis of adjustment of figure of peak flow at station near Washington for inflow and storage, and slope-area measurement of peak flow; minimum, 530 ft³/s Sept. 11, 12, 1966, gage height, 0.27 ft.
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, reached a stage of 40.2 ft, from floodmarks, discharge, about 460,000 ft³/s, from rating curve extended as explained above.
EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 35,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 21	0030	66400	13.13	Apr. 26	0500	*115000	19.21
Apr. 4	1800	52300	11.12	May 18	1100	54900	11.50
Apr. 11	2000	75700	14.40	May 24	1130	47400	10.38
Apr. 17	0900	51300	10.97				

Minimum discharge, 1,400 ft³/s Sept. 11, 27, 30, gage height, 0.79 ft.

DISCHARGE. IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2590	1950	5350	5220	4090	13500	18500	21200	11900	5560	1980	1810
2	2320	2120	9400	5030	4280	12500	16900	18900	10900	5410	2120	2140
3	2300	2410	8490	4690	5720	11800	24900	17100	9880	5060	2110	2430
4	2270	2490	8460	4580	13400	11100	48500	16900	9230	5000	2100	1970
5	2220	2640	7900	4280	18600	10400	44000	18400	9050	5210	2190	1770
6	2020	3300	6880	4160	16300	10700	31600	18600	9180	4680	2350	1700
7	1810	3390	6040	3660	12800	10200	25400	16600	9470	4550	2340	1670
8	1890	3460	5320	3440	10700	11700	23000	14700	9370	4150	2110	1580
9	1730	3360	4940	3290	9310	12300	26300	13500	8030	4000	2200	1600
10	1810	2990	4850	3460	8220	16100	50700	12400	7300	3780	2220	1430
11	1820	2790	4200	3910	7500	21600	70900	11300	6760	3430	2180	1420
12	1900	2880	4010	4240	5680	20100	68400	10300	6320	3340	2300	1420
13	1820	2640	3870	4580	5250	16900	46900	9420	5940	3260	2170	1450
14	1970	2210	3780	4590	5420	14500	34200	8820	5590	3110	2020	1500
15	2120	2500	3530	4430	5610	12800	29700	8770	5200	3020	1980	1560
16	2060	2580	3860	4080	6740	11400	37100	10600	5160	2820	1990	1570
17	1960	2310	4560	3920	7680	10200	50400	21200	4870	2760	1960	1590
18	2130	2100	9460	3740	8670	10100	40400	51900	5370	2650	1870	1610
19	2160	2010	14000	3260	14800	17300	31200	37700	6140	2570	1740	1550
20	2320	2010	11400	2880	21400	46700	25400	27300	7900	2590	1760	1500
21	2220	2150	9090	2760	20900	55800	21600	23400	9230	2550	1760	1520
22	2090	2180	7670	2920	20500	43300	18900	21100	20700	2560	1680	1620
23	1940	2230	6760	3050	23000	44000	16500	27600	23600	2380	1580	1650
24	1730	2270	6500	3540	25900	33600	20800	46300	13500	2710	1850	1780
25	1780	2260	6030	3780	26400	25100	69200	37600	9740	2910	1700	1660
26	2310	2470	5290	3910	23100	20100	109000	27200	7940	2740	1600	1520
27	2560	2510	5090	4110	19100	17300	62800	21200	6760	2330	1530	1410
28	2290	2490	5070	4180	15700	17300	40100	17200	6030	2120	1610	1420
29	2300	3340	4980	4250	---	22700	30300	15000	5810	2280	1630	1450
30	2360	3800	5010	4120	---	24100	24800	13500	5800	2280	1620	1480
31	2170	---	5200	4080	---	21100	---	12700	---	2230	1730	---
TOTAL	64970	77840	196990	122140	366770	626300	1158400	628410	262670	104040	59980	48780
MEAN	2096	2595	6355	3940	13100	20200	38610	20270	8756	3356	1935	1626
MAX	2590	3800	14000	5220	26400	55800	109000	51900	23600	5560	2350	2430
MIN	1730	1950	3530	2760	4090	10100	16500	8770	4870	2120	1530	1410
CFSM	.22	.27	.66	.41	1.36	2.09	4.00	2.10	.91	.35	.20	.17
IN.	.25	.30	.76	.47	1.41	2.41	4.47	2.42	1.01	.40	.23	.19

CAL YR 1982 TOTAL 3317870 MEAN 9090 MAX 76400 MIN 1550 CFSM .94 IN 12.79
WTR YR 1983 TOTAL 3717290 MEAN 10180 MAX 109000 MIN 1410 CFSM 1.06 IN 14.33

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1960 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1960 to current year.

REMARKS.--Water temperatures are measured daily in field by local observer at time of sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 33.5°C Aug. 24, 1964, July 19, 1977; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,350 mg/L Apr. 3, 1970; minimum daily mean, 1 mg/L on many days most years.
SEDIMENT LOADS: Maximum daily, 689,000 tons June 23, 1972; minimum daily, 2.0 tons on many days during 1964, 1966-69.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 30.0°C Aug. 7; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 736 mg/L Apr. 26; minimum daily mean, 1 mg/L Jan. 23.
SEDIMENT LOADS: Maximum daily, 222,000 tons Apr. 26; minimum daily, 8.6 tons Jan. 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
DEC										
28...	1230	4750	270	7.9	13.0	8.0	--	110	29	32
FEB										
25...	0945	25500	210	7.5	6.0	6.0	12.7	81	27	24
JUL										
26...	1245	2630	430	8.2	30.0	25.5	8.2	180	56	50

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
DEC										
28...	6.3	8.9	15	.4	1.6	77	1.9	34	12	<.10
FEB										
25...	5.0	5.3	12	.3	1.8	54	3.3	26	8.4	.10
JUL										
26...	13	19	19	.6	2.6	123	1.5	59	22	.20

< Actual value is known to be less than the value shown.

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
DEC										
28...	4.1	152	145	.21	1950	1.3	.050	.15	<3	6
FEB										
25...	5.6	118	109	.16	8120	1.3	.040	.12	31	13
JUL										
26...	3.6	259	243	.35	1840	1.2	.030	.09	6	3

< Actual value is known to be less than the value shown.

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TRITIUM IN WATER MOLECULES (TU)	TRITIUM WATER MOLECULES COUNT ERROR (TU)
OCT		
01-16	28.3	1.5
17-31	27.1	1.5
NOV		
01-21	27.8	1.0
23-30	29.4	1.1
DEC		
01-15	31.0	1.3
16-30	30.8	1.3
JAN		
01-17	32.2	1.3
18-31	33.1	1.4
FEB		
02-20	31.5	1.3
21-28	31.4	1.3
MAR		
01-16	32.8	1.4
MAR		
17-31	30.7	1.3
APR		
01-16	31.3	1.4
17-30	31.3	1.4
MAY		
01-16	32.5	1.4
17-29	31.3	1.4
JUN		
02-30	37.6	1.7
JUL		
02-30	32.5	1.5
AUG		
01-31	27.6	1.3
SEP		
01-30	29.1	1.4

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	TEMPERATURE (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
APR							
11...	0950	68500	10.0	2730	505000	38	49

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
APR						
11...	54	61	79	88	96	100

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	14.0	8.0	5.0	3.0	5.0	7.0	17.0	18.0	25.0	27.0	23.0
2	19.0	15.0	9.0	6.0	5.0	5.0	8.0	17.0	16.0	24.0	27.0	24.0
3	19.0	16.0	9.0	5.0	5.0	6.0	8.0	17.0	18.0	25.0	29.0	23.0
4	21.0	16.0	11.0	5.0	2.0	6.0	9.0	16.0	18.0	26.0	27.0	26.0
5	21.0	11.0	12.0	3.0	3.0	8.0	9.0	15.0	18.0	26.0	27.0	24.0
6	20.0	10.0	12.0	3.0	3.0	8.0	9.0	15.0	20.0	24.0	27.0	26.0
7	20.0	11.0	10.0	3.0	3.0	9.0	9.0	16.0	20.0	22.0	30.0	26.0
8	20.0	11.0	9.0	3.0	2.0	8.0	10.0	15.0	20.0	23.0	28.0	24.0
9	21.0	10.0	8.0	4.0	2.0	8.0	10.0	14.0	20.0	24.0	28.0	23.0
10	17.0	10.0	6.0	4.0	2.0	9.0	10.0	16.0	19.0	24.0	27.0	23.0
11	16.0	10.0	6.0	4.0	---	8.0	10.0	14.0	21.0	23.0	27.0	25.0
12	15.0	11.0	5.0	3.0	---	7.0	10.0	18.0	26.0	25.0	25.0	25.0
13	17.0	10.0	4.0	2.0	---	8.0	10.0	15.0	24.0	27.0	22.0	22.0
14	15.0	8.0	4.0	2.0	---	7.0	10.0	17.0	24.0	28.0	21.0	21.0
15	15.0	8.0	3.0	4.0	---	8.0	10.0	19.0	25.0	27.0	27.0	20.0
16	15.0	6.0	6.0	4.0	---	7.0	10.0	16.0	26.0	28.0	23.0	20.0
17	12.0	7.0	5.0	2.0	3.0	7.0	10.0	15.0	28.0	29.0	24.0	22.0
18	13.0	7.0	4.0	2.0	3.0	7.0	9.0	15.0	25.0	27.0	26.0	19.0
19	12.0	8.0	3.0	2.0	2.0	10.0	8.0	13.0	26.0	28.0	26.0	21.0
20	12.0	9.0	3.0	3.0	2.0	10.0	8.0	14.0	24.0	27.0	26.0	22.0
21	14.0	11.0	3.0	3.0	4.0	9.0	8.0	15.0	23.0	27.0	26.0	23.0
22	11.0	11.0	3.0	2.0	4.0	8.0	9.0	15.0	22.0	26.0	26.0	18.0
23	12.0	11.0	3.0	3.0	6.0	7.0	10.0	16.0	20.0	24.0	27.0	16.0
24	11.0	9.0	3.0	1.0	5.0	6.0	10.0	16.0	20.0	28.0	25.0	15.0
25	9.0	7.0	5.0	2.0	6.0	6.0	10.0	17.0	21.0	25.0	25.0	16.0
26	9.0	7.0	6.0	1.0	5.0	5.0	10.0	17.0	21.0	24.0	26.0	16.0
27	11.0	7.0	5.0	1.0	4.0	6.0	10.0	15.0	23.0	25.0	26.0	16.0
28	13.0	7.0	6.0	1.0	5.0	7.0	10.0	15.0	25.0	26.0	26.0	18.0
29	13.0	7.0	8.0	2.0	---	7.0	13.0	17.0	23.0	26.0	26.0	17.0
30	13.0	8.0	6.0	2.0	---	6.0	14.0	---	23.0	26.0	25.0	16.0
31	14.0	---	5.0	2.0	---	7.0	---	---	---	27.0	26.0	---
MEAN	15.0	10.0	6.0	3.0	3.5	7.0	9.5	16.0	22.0	25.5	26.0	21.0

WTR YR 1983 MEAN 14.0 MAX 30.0 MIN 1.0

01638500 POTOMAC RIVER AT POINT OF ROCKS, MD--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	10	66	4	20	15	217	5	70	8	88	11	401
2	8	48	7	38	39	990	4	54	6	69	9	304
3	5	29	5	31	24	550	4	51	11	170	9	287
4	4	23	4	25	24	548	4	49	52	1880	10	300
5	4	22	4	27	15	320	4	46	54	2710	10	281
6	6	31	5	42	17	316	4	45	43	1890	11	318
7	5	23	5	44	19	310	4	40	19	657	14	386
8	4	19	7	62	14	201	3	28	10	289	17	537
9	4	18	7	60	8	107	3	27	8	201	20	664
10	3	14	6	48	6	79	5	47	8	178	34	1480
11	3	14	3	23	5	57	3	32	6	121	38	2220
12	5	24	3	23	5	54	3	34	6	92	26	1410
13	5	23	3	21	4	42	3	37	5	71	23	1050
14	4	20	4	24	4	41	3	37	8	117	20	783
15	5	27	5	34	4	38	3	36	10	151	16	553
16	5	26	4	28	5	52	3	33	15	273	12	369
17	2	10	2	12	8	98	4	42	20	415	11	303
18	3	16	3	17	24	613	26	263	14	328	11	300
19	6	33	3	16	32	1210	7	62	14	559	30	1400
20	4	24	3	16	24	739	4	31	38	2200	368	53300
21	4	23	3	17	18	442	3	22	36	2030	311	46900
22	3	16	3	18	14	290	2	16	34	1880	135	15800
23	2	9.9	3	18	13	237	1	8.2	35	2170	165	19600
24	2	8.8	3	18	11	193	2	19	47	3290	120	10900
25	3	14	3	18	9	147	2	20	44	3140	60	4070
26	3	18	3	20	7	100	2	21	32	2000	32	1740
27	3	20	3	20	6	82	2	22	22	1130	20	934
28	4	23	3	20	5	68	3	34	14	593	20	934
29	4	23	3	27	5	67	6	69	---	---	26	1590
30	4	24	6	62	6	81	9	100	---	---	36	2340
31	3	17	---	---	5	70	10	110	---	---	28	1600
TOTAL	---	706.7	---	849	---	8359	---	1505.2	---	28692	---	173054

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	22	1100	41	2350	15	482	20	300	9	48	19	93
2	22	1000	30	1530	12	353	19	278	8	46	19	110
3	64	4850	29	1340	14	373	20	273	7	40	16	105
4	305	39900	26	1190	16	399	21	283	9	51	10	53
5	232	27600	30	1490	12	293	21	295	12	71	11	53
6	85	7250	29	1460	10	248	18	227	11	70	14	64
7	48	3290	33	1480	13	332	15	184	9	57	14	63
8	33	2050	21	833	15	379	13	146	10	57	14	60
9	54	3830	17	620	18	390	12	130	11	65	13	56
10	150	20500	13	435	13	256	11	112	11	66	10	39
11	348	66600	11	336	14	256	11	102	11	65	10	38
12	298	55000	11	306	15	256	10	90	13	81	10	38
13	134	17000	7	178	15	241	8	70	12	70	11	43
14	68	6280	7	167	16	241	7	59	12	65	11	45
15	46	3690	8	189	14	197	9	73	13	69	10	42
16	60	6010	36	1030	13	181	10	76	14	75	10	42
17	130	17700	44	2720	14	184	11	82	15	79	11	47
18	102	11100	212	29700	16	232	12	86	16	81	12	52
19	50	4210	112	11400	20	332	12	83	15	70	12	50
20	30	2060	53	3910	28	597	11	77	14	67	11	45
21	21	1220	35	2210	37	922	11	76	14	67	11	45
22	23	1170	30	1710	95	5310	11	76	13	59	11	48
23	23	1020	49	4490	132	8410	10	64	12	51	12	53
24	30	1680	222	27800	105	3830	12	88	14	70	12	58
25	346	79600	117	11900	63	1660	14	110	13	60	11	49
26	736	222000	61	4480	35	750	14	104	12	52	9	37
27	256	48100	34	1950	27	493	11	69	11	45	8	30
28	100	10800	27	1250	21	342	9	52	12	52	8	31
29	62	5070	22	891	21	329	10	62	13	57	6	23
30	50	3350	20	729	21	329	10	62	14	61	6	24
31	---	---	18	617	---	---	9	54	16	75	---	---
TOTAL	---	675030	---	120691	---	28597	---	3843	---	1942	---	1536

TOTAL LOAD FOR YEAR: 1044804.9 TONS.

01643700 GOOSE CREEK NEAR MIDDLEBURG, VA

LOCATION.--Lat 38°59'11", long 77°47'49", Loudoun County, Hydrologic Unit 02070008, on right bank 250 ft upstream from bridge on State Highway 611, 2.0 mi downstream from Panther Skin Creek, and 3.4 mi northwest of Middleburg.

DRAINAGE AREA.--123 mi².

PERIOD OF RECORD.--October 1965 to September 1967, July 1969 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 329.80 ft National Geodetic Vertical Datum of 1929. October 1965 to September 1967 at site 300 ft downstream at datum 0.73 ft lower.

REMARKS.--Records good except those for period of no gage-height record, Feb. 28 to Apr. 13, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--16 years, 137 ft³/s, 15.13 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s June 22, 1972, gage height, 27.46 ft, from floodmarks, from rating curve extended above 2,900 ft³/s on basis of slope-area measurements at gage heights 14.44 ft and 27.46 ft; minimum, 0.10 ft³/s Sept. 1-4, 8-12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,350 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	----	Unknown	Unknown	May 16	1730	1750	7.98
Apr. 10	Unknown	*4400	a13.30	June 7	0030	1820	8.14
Apr. 15	1900	2620	10.05	June 21	0100	2540	9.88
Apr. 24	1400	2870	10.54				

a From high-water mark.

Minimum discharge, 1.4 ft³/s Sept. 10-11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	18	56	29	42	230	210	290	148	91	7.6	3.4
2	4.8	18	75	28	144	290	200	265	142	86	7.6	3.4
3	4.0	17	52	27	316	270	640	242	131	90	8.2	3.4
4	5.1	64	44	25	182	240	500	229	140	92	7.0	3.0
5	5.7	115	38	24	138	210	370	203	126	85	152	2.8
6	6.0	38	35	25	126	190	300	182	399	68	39	2.8
7	6.6	25	30	25	122	230	300	169	667	58	22	2.5
8	6.6	20	25	24	115	700	350	176	234	51	16	2.3
9	6.6	17	22	22	100	600	450	178	182	47	13	2.1
10	7.1	15	21	69	93	470	3000	146	160	44	11	1.8
11	7.1	13	21	146	82	400	1800	137	142	39	10	1.6
12	7.7	12	27	94	81	340	900	130	130	38	16	1.8
13	19	22	24	72	80	280	560	123	119	35	15	6.9
14	40	24	24	66	110	240	451	121	111	32	13	18
15	31	17	23	62	143	210	1280	144	106	29	11	10
16	21	15	207	52	164	190	1030	787	100	27	8.8	5.8
17	20	12	142	44	182	180	702	595	94	24	7.0	5.4
18	15	12	89	41	226	250	547	363	139	21	7.0	3.8
19	13	12	68	38	271	1000	432	293	141	23	8.2	3.4
20	13	12	62	34	285	700	363	273	176	28	6.6	3.4
21	16	14	56	35	304	560	318	329	596	47	5.0	3.8
22	15	13	47	37	366	440	285	399	187	29	4.2	12
23	15	13	43	64	464	350	265	419	139	22	3.8	12
24	12	14	43	94	454	290	1570	304	114	19	6.6	7.6
25	44	12	39	68	371	250	1310	260	102	17	8.2	4.6
26	100	11	38	58	313	220	792	239	91	16	6.6	4.2
27	48	11	36	54	255	330	569	218	85	14	5.4	4.6
28	32	13	37	51	226	400	445	185	170	12	4.6	5.8
29	25	120	37	46	---	300	374	187	184	10	5.0	13
30	21	73	33	47	---	260	329	176	108	8.8	4.6	38
31	19	---	30	46	---	230	---	156	---	7.6	3.8	---
TOTAL	591.7	792	1524	1547	5755	10850	20642	7918	5363	1210.4	443.8	193.2
MEAN	19.1	26.4	49.2	49.9	206	350	688	255	179	39.0	14.3	6.44
MAX	100	120	207	146	464	1000	3000	787	667	92	152	38
MIN	4.0	11	21	22	42	180	200	121	85	7.6	3.8	1.6
CFSM	.16	.22	.40	.41	1.68	2.85	5.59	2.07	1.46	.32	.12	.05
IN.	.18	.24	.46	.47	1.74	3.28	6.24	2.39	1.62	.37	.13	.06

CAL YR 1982 TOTAL 40454.5 MEAN 111 MAX 1320 MIN 4.0 CFSM .90 IN 12.23
WTR YR 1983 TOTAL 56830.1 MEAN 156 MAX 3000 MIN 1.6 CFSM 1.27 IN 17.19

01644000 GOOSE CREEK NEAR LEESBURG, VA

LOCATION.--Lat 39°01'10", long 77°34'40", Loudoun County, Hydrologic Unit 02070008, on left bank 400 ft upstream from bridge on State Highway 621 at Evergreen Mills, 1.4 mi downstream from Little River, 6.7 mi south of Leesburg, and 10.9 mi upstream from mouth.

DRAINAGE AREA.--332 mi^2.

PERIOD OF RECORD.--July 1909 to April 1911, September 1911 to December 1912, January 1930 to current year.

REVISED RECORDS.--WSP 851: 1935-37. WSP 951: 1933(M), 1937. WSP 1302: 1934-35(M). WSP 2103: Drainage area. WDR VA-72-1: 1937(M), 1943(M), 1951(M), 1956(M). WDR VA-79-1: 1978.

GAGE.--Water-stage recorder. Datum of gage is 248.93 ft National Geodetic Vertical Datum of 1929. July 12, 1909, to Dec. 31, 1912, nonrecording gage at site 1,000 ft downstream at different datum. Jan. 21, 1930, to Nov. 28, 1938, nonrecording gage at site 400 ft downstream at datum 4.20 ft lower than present datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--55 years (water years 1910, 1912, 1931-83), 315 ft^3/s, 12.88 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,100 ft^3/s June 22, 1972, gage height, 30.59 ft, from high-water mark in gage house, from rating curve extended above 11,000 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 0.40 ft^3/s Sept. 27-30, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May or June 1889 reached a stage of about 29 ft, discharge, about 45,000 ft^3/s, site and datum in use 1930-38, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 10	1630	*11500	14.86	May 16	2230	4390	7.17
Apr. 16	0030	6770	10.38	June 7	0300	4750	7.73
Apr. 24	2100	7860	11.69				

Minimum discharge, 7.4 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	45	237	115	142	643	502	669	373	278	32	13
2	29	42	261	110	300	711	466	608	356	239	33	12
3	28	40	221	108	932	587	1820	566	327	233	37	10
4	27	696	191	104	523	512	1060	538	341	231	32	9.4
5	26	679	169	100	385	464	796	480	326	290	142	9.9
6	23	247	152	106	343	427	688	437	588	216	123	11
7	24	157	134	105	340	550	718	404	2380	178	55	9.3
8	23	121	117	101	325	1810	893	396	607	155	41	9.4
9	24	102	109	95	280	1850	1090	443	446	143	34	8.7
10	25	90	100	155	256	1250	8820	365	384	132	28	8.8
11	27	81	98	442	154	936	3650	338	345	120	27	8.4
12	27	76	105	311	150	744	1890	319	311	113	56	9.9
13	33	124	110	238	150	616	1350	304	284	103	45	21
14	51	119	110	207	200	544	1080	294	266	92	37	39
15	48	102	100	194	250	499	3000	338	250	84	31	35
16	49	85	600	178	352	446	3690	1840	241	79	27	26
17	41	77	450	153	436	413	1730	2050	226	70	23	16
18	35	75	350	120	587	938	1350	933	245	62	24	14
19	31	70	290	117	784	2990	1060	693	383	61	24	12
20	30	69	250	111	814	1610	877	661	372	73	23	10
21	39	69	220	115	858	1340	748	715	1960	152	20	12
22	39	69	200	115	1100	996	656	1200	569	100	16	30
23	38	69	180	162	1520	750	602	1520	392	68	23	29
24	39	68	170	283	1440	642	4700	899	320	58	51	27
25	111	63	160	220	1100	577	3810	672	277	53	32	22
26	283	60	150	189	969	511	1900	595	241	51	29	17
27	149	59	140	175	748	670	1350	616	221	47	24	16
28	88	68	140	166	657	1150	1060	475	242	43	21	17
29	65	422	140	155	---	680	873	464	691	39	18	19
30	54	335	130	150	---	573	761	456	342	36	17	30
31	48	---	120	150	---	532	---	405	---	33	15	---
TOTAL	1587	4379	5904	5050	16095	26961	52990	20693	14306	3632	1140	511.8
MEAN	51.2	146	190	163	575	870	1766	668	477	117	36.8	17.1
MAX	283	696	600	442	1520	2990	8820	2050	2380	290	142	39
MIN	23	40	98	95	142	413	466	294	221	33	15	8.4
CFSM	.15	.44	.57	.49	1.73	2.62	5.32	2.01	1.44	.35	.11	.05
IN.	.18	.49	.66	.57	1.80	3.02	5.94	2.32	1.60	.41	.13	.06

CAL YR 1982 TOTAL 111860.0 MEAN 306 MAX 5000 MIN 14 CFSM .92 IN 12.53
WTR YR 1983 TOTAL 153248.8 MEAN 420 MAX 8820 MIN 8.4 CFSM 1.27 IN 17.17

01646000 DIFFICULT RUN NEAR GREAT FALLS, VA

LOCATION.--Lat 38°58'33", long 77°14'46", Fairfax County, Hydrologic Unit 02070008, on right bank 250 ft downstream from bridge on State Highway 193, 300 ft downstream from Rocky Run, 0.7 mi upstream from mouth, and 1.5 mi southeast of Great Falls.

DRAINAGE AREA.--57.9 mi².

PERIOD OF RECORD.--October 1934 to current year. Monthly discharge only October to December 1934, published in WSP 1302.

REVISED RECORDS.--WSP 951: 1936(M), 1937-38, 1939-40(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 151.30 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--49 years, 59.7 ft³/s, 14.00 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,200 ft³/s June 22, 1972, gage height, 21.40 ft, from floodmarks, from rating curve extended above 1,600 ft³/s on basis of contracted-opening measurement at gage height 13.18 ft and slope-area measurement at gage height 21.40 ft; minimum, 0.05 ft³/s Sept. 9, 10, 1966, gage height, 1.65 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 10	1130	1210	7.83	June 20	0130	1360	8.14
Apr. 15	2300	*1920	9.21	June 29	0330	1140	7.64
June 7	0300	1040	7.41				

Minimum discharge, 6.2 ft³/s Sept. 12, gage height, 2.51 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	16	86	25	27	63	57	66	47	53	17	11
2	14	16	69	24	103	113	54	64	46	47	17	10
3	13	16	40	24	93	61	180	61	45	40	16	9.7
4	12	174	38	23	46	51	74	62	67	108	16	9.2
5	12	161	35	25	36	47	60	56	71	167	20	8.8
6	12	44	33	31	37	45	57	53	222	52	23	8.7
7	12	34	28	31	50	55	85	51	392	40	16	9.1
8	12	26	25	29	52	190	104	59	79	35	15	7.8
9	12	25	24	28	39	189	189	67	59	33	13	6.9
10	12	23	23	66	35	139	897	52	53	32	12	7.0
11	11	22	25	99	34	81	317	49	49	30	14	6.7
12	12	21	32	44	36	65	125	48	45	30	31	7.9
13	16	47	31	34	39	56	93	47	44	28	16	69
14	28	27	27	[illegible]	42	51	81	46	43	25	15	37
15	15	23	[illegible]	[illegible]	47	49	664	63	41	24	14	15
16	17	21	[illegible]	[illegible]	79	46	679	418	41	24	13	12
17	14	21	[illegible]	[illegible]	[illegible]	44	159	250	37	22	14	11
18	12	21	[illegible]	[illegible]	[illegible]	100	108	81	59	23	18	11
19	12	21	[illegible]	[illegible]	[illegible]	209	90	69	99	21	16	9.6
20	12	20	[illegible]	[illegible]	[illegible]	79	79	71	394	32	13	8.6
21	19	20	[illegible]	[illegible]	109	262	74	185	314	111	11	58
22	16	20	[illegible]	[illegible]	126	110	71	136	76	32	10	69
23	14	20	[illegible]	[illegible]	164	69	67	107	55	26	40	16
24	15	19	30	[illegible]	114	59	567	69	48	34	23	12
25	117	18	29	39	76	54	224	59	44	25	15	11
26	156	17	31	35	67	50	111	57	40	24	12	10
27	32	17	29	33	55	171	91	55	40	23	11	11
28	34	26	28	32	51	291	82	49	142	22	12	10
29	30	269	29	30	---	87	74	61	519	20	17	10
30	18	60	26	29	---	67	70	57	70	19	11	60
31	17	---	25	29	---	61	---	51	---	18	10	---
TOTAL	743	1265	1443	1072	2017	3014	5583	2619	3281	1220	501	543.0
MEAN	24.0	42.2	46.5	34.6	72.0	97.2	186	84.5	109	39.4	16.2	18.1
MAX	156	269	353	99	164	291	897	418	519	167	40	69
MIN	11	16	23	23	27	44	54	46	37	18	10	6.7
CFSM	.42	.73	.80	.60	1.24	1.68	3.21	1.46	1.88	.68	.28	.31
IN.	.48	.81	.93	.69	1.30	1.94	3.59	1.68	2.11	.78	.32	.35

CAL YR 1982 TOTAL 18616.0 MEAN 51.0 MAX 911 MIN 6.8 CFSM .88 IN 11.96
WTR YR 1983 TOTAL 23301.0 MEAN 63.8 MAX 897 MIN 6.7 CFSM 1.10 IN 14.97

01646500 POTOMAC RIVER NEAR WASHINGTON, DC

LOCATION.--Lat 38°56'58", long 77°07'40", Montgomery County, Md., Hydrologic Unit 02070008, on left bank just above Little Falls Dam, 1 mi upstream from District of Columbia boundary line, 1.2 mi upstream from Chain Bridge, 1.8 mi east of Langley, Fairfax County, Va., and at mile 117.4.

DRAINAGE AREA.--11,560 mi².

PERIOD OF RECORD.--March 1930 to current year.

REVISED RECORDS.--WSP 726: Drainage area. WDR MD-DE-75-1: 1973-74(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 37.95 ft National Geodetic Vertical Datum of 1929. Prior to June 7, 1930, nonrecording gage, and June 7, 1930, to Jan. 22, 1965, water-stage recorder, at site 1 mi upstream on right bank at same datum.

REMARKS.--Records good. Diversions at Great Falls through aqueducts, and since June 1959, from gage pool at Little Falls Dam, for municipal supply of Washington, D. C.; since October 1958, at Rockville Filtration Plant, for municipal supply of city of Rockville; since April 1961, at Potomac Filtration Plant, for water supply of Washington Suburban Sanitary District; since October 1961, at Fairfax Water Treatment Plant for water supply of city of Fairfax (from Goose Creek); and since April 1964, at Violets Lock to Chesapeake and Ohio Canal. Low flow affected slightly by Stony River Reservoir and since December 1950 by Savage River Reservoir, and since July 1981, by Bloomington Lake. Gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 11,420 ft³/s, 13.42 in/yr, adjusted for diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 484,000 ft³/s Mar. 19, 1936, gage height, 28.1 ft, site then in use; minimum daily observed at gaging station, 121 ft³/s Sept. 9, 1966, does not include diversion of 489 ft³/s for municipal use; minimum daily (adjusted), 601 ft³/s Sept. 10, 1966, includes diversion of 449 ft³/s for municipal use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1889, was of approximately the same magnitude as that of Mar. 19, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 45,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 21	0745	74300	7.84	Apr 26	1445	*128000	9.81
Apr. 5	0115	59500	7.17	May 18	1830	62500	7.31
Apr. 11	Unknown	99100	8.82	May 24	1800	55000	6.95
Apr. 16	Unknown	97200	8.75				

Minimum daily discharge, 1,200 ft³/s Sept. 11, does not include diversion for municipal use; minimum daily (adjusted) discharge, 1,800 ft³/s Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2500	2260	5620	5130	4510	17800	22700	26400	14500	7080	1850	1560
2	2430	1970	7200	5210	4930	16700	20200	23400	13400	6270	1780	1550
3	2350	1910	9990	5030	7660	15700	25600	21000	12200	5850	1740	1860
4	2170	2590	8850	4640	14100	14300	49900	19700	11400	5680	1780	2290
5	2130	5130	8590	4410	24000	13100	54200	19900	10900	6140	1880	1980
6	2060	4260	7830	4260	20000	12200	39900	21200	11400	5610	2350	1610
7	1950	4180	6740	4090	16500	12700	31600	20200	16800	5030	2760	1550
8	1740	3890	5940	3620	13500	20000	28100	17900	12500	4920	2510	1460
9	1720	3740	5130	3420	11500	23800	29900	16400	10400	4300	2080	1320
10	1570	3580	4800	3490	10000	21800	58000	15100	9020	4150	1960	1290
11	1580	3200	4750	4760	9020	25600	98000	13800	8110	3970	2000	1200
12	1600	2720	4230	6510	5590	25700	87500	12600	7490	3520	2250	1250
13	1740	2710	3980	5940	4840	21900	64400	11700	6950	3460	2290	1250
14	1820	2540	3830	5430	6240	18700	43400	10800	6440	3260	2200	1300
15	1840	2300	3710	5140	6880	16700	41600	10500	5940	3110	2110	1300
16	2000	2400	5400	4710	8380	14300	64800	14600	5540	2930	1990	1350
17	1990	2440	6510	4380	9290	12800	66600	25600	5360	2750	1970	1350
18	1810	2400	6320	4090	10700	12100	55400	49600	5200	2680	1990	1350
19	1940	2330	12500	3220	13400	20600	40500	49800	6960	2540	1940	1390
20	1960	2290	14000	2660	22500	45400	32700	35100	12300	2580	1620	1390
21	2170	2290	10900	3100	25500	69200	27600	30100	17000	2770	1600	1330
22	2090	2290	8860	3100	25000	52900	23900	28600	18000	2540	1550	1690
23	1980	2250	7580	3400	27700	50600	21000	33900	29900	2480	1910	1510
24	1950	2130	6750	3770	32400	42400	27600	49700	19500	2430	1970	1560
25	2060	2110	6490	4300	32800	32000	63600	48000	13100	2470	1800	1470
26	2640	2240	5920	4510	30300	25200	121000	34900	10200	2670	1660	1560
27	2800	2340	5420	4510	25200	22000	86300	27500	8300	2520	1480	1420
28	2770	2490	5240	4710	20700	25900	52300	22100	7330	2170	1430	1290
29	2500	4500	5200	4730	---	26600	38500	18800	7830	1810	1520	1290
30	2320	5370	5090	4720	---	28500	31000	16900	8340	1850	1590	1420
31	2340	---	5090	4580	---	26100	---	15600	---	1920	1520	---
TOTAL	64520	86850	208460	135570	443140	783300	1447800	761400	332310	111460	59080	44140
MEAN	2081	2895	6725	4373	15830	25270	48260	24560	11080	3595	1906	1471
MAX	2800	5370	14000	6510	32800	69200	121000	49800	29900	7080	2760	2290
MIN	1570	1910	3710	2660	4510	12100	20200	10500	5200	1810	1430	1200
(*)	490	466	467	463	475	461	470	514	533	603	594	578
MEAN‡	2573	3360	7198	4837	16320	25730	48720	25070	11610	4199	2499	2050
CFSM‡	.22	.29	.62	.42	1.41	2.23	4.21	2.17	1.00	.36	.22	.18
IN‡	.26	.32	.72	.48	1.47	2.57	4.70	2.50	1.12	.42	.25	.20

CAL YR 1982 TOTAL 3936130 MEAN 10780 MAX 92700 MIN 1330 MEAN‡ 11290 CFSM‡ .98 IN‡ 13.26
WTR YR 1983 TOTAL 4478030 MEAN 12270 MAX 121000 MIN 1200 MEAN‡ 12780 CFSM‡ 1.11 IN‡ 15.01

* Diversion in cfs, for municipal supply of Washington, D.C., Washington Suburban Sanitary District, city of Rockville, city of Fairfax (from Goose Creek), and the Chesapeake and Ohio Canal (insignificant diversion to canal during current water year); records furnished by Corps of Engineers, Washington Suburban Sanitary Commission, city of Rockville, and city of Fairfax.

‡ Adjusted for diversion.

01646580 POTOMAC RIVER AT CHAIN BRIDGE, AT WASHINGTON, DC
(National stream-quality accounting network station)

LOCATION.--Lat 38°55'46", long 77°07'02", Arlington County, Va., Hydrologic Unit 02070010, under right downstream side of bridge on Virginia State Highway 123 and at river mile 115.9.

DRAINAGE AREA.--11,570 mi^2.

PERIOD OF RECORD.--Water years 1973 to current year. Prior to October 1977, published as "at Great Falls."

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
DEC 01...	1030	5700	365	8.3	12.5	9.5	766	25	11.9	104
FEB 09...	1015	12000	225	7.7	1.5	2.5	765	6.6	14.6	107
APR 20...	1015	33100	190	8.1	6.0	8.0	--	24	13.6	--
MAY 25...	1030	50400	186	7.8	19.0	15.0	--	60	10.4	--
JUL 19...	1030	2500	370	8.1	25.0	28.0	765	3.6	7.6	97
SEP 13...	1130	1290	430	8.0	28.0	23.0	760	2.4	7.7	90

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
DEC 01...	1200	5500	140	38	40	8.7	16	20	.6	2.9
FEB 09...	850	--	88	29	26	5.6	8.3	17	.4	1.9
APR 20...	200	350	81	27	24	5.2	4.3	10	.2	1.5
MAY 25...	2100	7600	73	23	21	5.0	4.5	11	.2	1.9
JUL 19...	K10	100	150	45	43	11	15	17	.5	2.7
SEP 13...	--	<10000	160	54	43	13	25	25	.9	3.2

< Actual value is known to be less than the value shown.
K Result based on colony count outside optimal range.

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)
DEC 01...	98	.9	44	22	.10	2.2	203	195	.28	3120
FEB 09...	59	2.3	28	11	<.10	5.1	239	121	.33	7740
APR 20...	55	.8	24	6.1	<.10	7.8	129	106	.18	11500
MAY 25...	50	1.5	20	4.8	<.10	6.8	95	94	.13	12900
JUL 19...	108	1.7	46	17	.20	4.4	246	204	.33	1660
SEP 13...	107	2.1	67	30	.20	4.7	275	251	.37	958

< Actual value is known to be less than the value shown.

0164 580 POTOMAC RIVER AT CHAIN BRIDGE, AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS TOTAL (MG/L AS PO4)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
DEC 01...	.84	.080	.10	.40	.100	.31	.060	.050	.15
FEB 09...	1.5	.050	.06	.20	.090	.28	.050	.050	.15
APR 20...	1.5	.040	.05	.50	.100	.31	.030	.030	.09
MAY 25...	1.1	.040	.05	.80	.170	.52	.040	.030	.09
JUL 19...	1.2	.070	.09	.60	.090	.28	.090	.060	.18
SEP 13...	1.0	.120	.15	1.60	.100	.31	.080	.080	.25

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
DEC 01...	<10	1	44	<1	<1	--	<3	6	63	2
APR 20...	30	1	38	<1	<1	<1	<3	2	58	3
MAY 25...	70	1	41	1	1	<1	3	3	68	<1
SEP 13...	30	2	63	1	<1	<1	<3	2	4	1

< Actual value is known to be less than the value shown.

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC 01...	6	16	.5	<10	2	<1	<1	190	<6.0	30
APR 20...	<4	6	--	<10	3	<1	<1	89	<6.0	37
MAY 25...	4	18	<.1	20	<1	<1	<1	90	6.0	12
SEP 13...	11	12	.1	<10	4	<1	<1	240	<6.0	7

< Actual value is known to be less than the value shown.

01646580 POTOMAC RIVER AT CHAIN BRIDGE, AT WASHINGTON, DC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
APR									
20...	<2.7	1.9	1.3	2.2	1.8	2.1	1.7	.08	.15
SEP									
13...	<7.4	1.4	1.0	4.9	1.5	4.7	1.3	.08	.22

< Actual value is known to be less than the value shown.

DATE	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC			
01...	19	292	93
FEB			
09...	18	583	94
APR			
20...	61	--	91

DATE	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAY			
25...	155	--	96
JUL			
19...	11	--	98
SEP			
13...	6	21	51

01654000 ACCOTINK CREEK NEAR ANNANDALE, VA

LOCATION.--Lat 38°48'46", long 77°13'43", Fairfax County, Hydrologic Unit 02070010, on left bank 800 upstream from bridge on State Highway 620, 0.2 mi upstream from Long Branch, and 2.3 mi southwest of Annandale.

DRAINAGE AREA.--23.5 mi².

PERIOD OF RECORD.--March 1947 to current year (fragmentary prior to October 1947).

REVISED RECORDS.--WSP 1502: 1952. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 191.24 ft National Geodetic Vertical Datum of 1929 (levels by Stone and Webster Engineering Corp.). Prior to May 12, 1949, nonrecording gage at site 800 ft downstream at datum 0.33 ft lower. May 12, 1949, to June 4, 1970, water-stage recorder at site 800 ft downstream at datum 0.33 ft lower.

REMARKS.--Records good except those for period of no gage-height record, July 13 to Aug. 22, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 27.7 ft³/s, 16.01 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s June 22, 1972, gage height, 15.96 ft, from high-water mark in gage house, from rating curve extended above 6,600 ft³/s on basis of contracted-opening and flow-over-road measurement of peak flow; minimum, 0.10 ft³/s Sept. 25, 26, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 15	1900	2600	9.67	June 29	0300	1880	8.68
June 21	0100	*3120	10.22				

Minimum discharge, 0.34 ft³/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	3.6	78	6.4	7.0	64	17	17	13	15	2.7	1.5
2	2.9	3.6	23	6.4	117	57	24	17	12	13	2.8	1.1
3	2.7	3.6	13	6.3	32	19	106	16	16	11	2.6	1.0
4	2.4	151	11	5.9	13	15	22	18	78	119	2.6	.95
5	2.4	29	9.4	7.8	10	14	18	15	25	105	6.0	.95
6	2.2	8.8	8.7	10	14	15	25	14	82	17	4.0	1.3
7	2.4	6.4	7.5	6.6	34	31	53	13	65	12	3.0	.87
8	2.3	5.8	7.0	6.1	18	152	56	26	15	11	2.7	.54
9	2.4	5.3	6.9	5.9	11	63	175	20	12	9.6	2.4	.56
10	2.1	4.6	6.5	79	10	83	375	13	11	8.7	2.0	.57
11	1.9	4.5	8.6	38	10	25	186	13	10	8.0	4.5	.43
12	2.4	11	15	13	11	18	40	12	9.7	8.4	15	56
13	17	67	15	9.7	13	15	28	12	12	7.6	5.0	152
14	19	8.8	9.5	8.9	15	15	24	12	10	6.8	4.0	13
15	3.3	6.4	20	8.4	33	14	826	25	8.7	6.4	3.0	3.7
16	9.4	5.4	214	7.5	65	13	127	277	8.3	6.0	2.0	2.2
17	3.0	5.3	24	7.0	75	13	42	40	7.5	5.6	1.7	1.9
18	1.9	5.3	13	6.7	87	104	34	18	43	5.4	2.5	1.7
19	2.2	5.2	11	6.1	60	86	26	27	37	5.2	5.0	1.4
20	2.0	5.1	13	5.9	44	22	22	21	91	13	2.9	1.3
21	20	5.0	9.4	6.4	42	203	20	146	486	90	1.7	78
22	3.9	5.0	8.5	7.0	43	32	19	50	20	10	1.2	27
23	2.1	5.7	8.0	49	65	20	22	35	14	7.0	3.0	3.9
24	2.1	4.8	7.7	16	30	18	357	23	11	15	6.0	2.5
25	191	4.0	7.3	9.7	20	16	76	16	10	7.3	2.2	1.9
26	17	4.2	8.0	8.5	21	14	31	15	9.0	5.0	1.3	1.6
27	8.0	4.5	7.6	7.9	16	251	25	10	8.7	4.6	1.1	1.6
28	5.7	63	7.5	7.7	16	86	22	13	66	4.0	36	2.2
29	4.4	245	8.1	7.2	---	26	20	31	360	3.7	7.2	1.6
30	3.8	18	7.1	8.0	---	21	18	17	20	3.3	2.3	47
31	3.8	---	8.5	8.5	---	18	---	13	---	3.0	1.7	---
TOTAL	345.7	684.9	600.6	387.7	928.0	1541	2836	1011	1578.9	547.1	130.1	410.27
MEAN	11.2	22.8	19.4	12.5	33.1	49.7	94.5	32.6	52.6	17.6	4.20	13.7
MAX	191	245	214	79	117	251	826	277	486	119	36	152
MIN	1.9	3.6	6.5	5.9	7.0	13	17	12	7.5	3.0	1.1	.43
CFSM	.48	.97	.83	.53	1.41	2.12	4.02	1.39	2.23	.75	.18	.58
IN.	.55	1.08	.95	.61	1.47	2.44	4.49	1.60	2.49	.87	.21	.65

CAL YR 1982 TOTAL 8835.18 MEAN 24.2 MAX 545 MIN .63 CFSM 1.03 IN 14.01
WTR YR 1983 TOTAL 11001.27 MEAN 30.1 MAX 826 MIN .43 CFSM 1.28 IN 17.41

01655500 CEDAR RUN NEAR WARRENTON, VA

LOCATION.--Lat 38°44'25", long 77°47'16", Fauquier County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on State Highway 672, 1.9 mi north of Warrenton, and 14.5 mi upstream from Licking Run.

DRAINAGE AREA.--12.3 mi².

PERIOD OF RECORD.--July 1950 to current year.

REVISED RECORDS.--WSP 1382: 1951-53. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 419.40 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation since September 1966 by Warrenton municipal water-supply reservoir 400 ft above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 12.8 ft³/s, 14.13 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,840 ft³/s June 21, 1972, gage height, 12.87 ft, from rating curve extended above 600 ft³/s on basis of areal study of flood of 1942; no flow part of each day Aug. 11-14, 1967, probably caused by dam 400 ft above gage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1942 reached a stage of about 13 ft, discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 4	1730	476	6.22	Apr. 15	1530	750	7.20
Apr. 10	0630	*2280	8.88	Apr. 24	1030	734	7.16

Minimum discharge, 0.01 ft³/s Sept. 8, 9, 10, gage height, 1.98 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	1.8	14	5.2	6.2	21	21	22	11	3.6	.02	.02
2	.92	1.8	15	5.2	18	21	20	20	10	3.0	.02	.02
3	1.0	1.7	12	5.2	26	17	54	17	10	9.9	.02	.02
4	1.3	86	10	4.4	20	16	30	16	15	11	.03	.02
5	1.5	33	9.5	4.8	14	14	24	14	10	4.8	.08	.02
6	1.6	9.2	8.6	5.0	15	14	23	12	8.1	4.1	.08	.02
7	1.7	6.4	6.4	5.2	15	18	25	11	7.8	2.3	.05	.02
8	1.7	5.0	5.9	4.6	13	60	28	12	6.4	1.8	.03	.02
9	1.6	4.8	6.2	4.6	12	58	47	11	5.6	2.0	.03	.02
10	1.5	3.7	5.0	10	11	43	495	10	5.4	1.8	.03	.02
11	1.4	3.7	5.2	14	14	32	166	9.1	4.8	1.8	.16	.02
12	1.5	4.1	7.1	11	14	25	83	8.4	4.6	1.3	.21	.02
13	1.6	6.7	5.7	8.2	12	19	54	8.1	4.6	1.4	.08	.11
14	1.2	3.7	5.2	8.2	11	18	42	8.4	4.8	1.0	.05	.03
15	1.1	4.5	5.7	8.9	10	16	273	12	4.4	1.0	.03	.02
16	1.7	3.2	39	5.9	13	14	148	96	4.4	1.1	.03	.02
17	1.6	4.1	23	6.2	18	13	79	56	3.6	.60	.03	.02
18	1.6	3.9	16	7.1	26	32	54	29	3.3	.66	.03	.02
19	1.6	3.9	14	5.7	34	82	41	22	3.6	.54	.03	.02
20	1.6	3.9	12	3.7	38	48	32	21	4.1	2.0	.03	.02
21	1.7	3.9	11	4.8	44	58	28	42	11	4.1	.03	.03
22	1.7	3.9	8.9	5.4	51	42	34	37	8.4	1.2	.03	.05
23	1.7	3.9	8.9	9.5	66	30	23	32	4.6	.75	.03	.02
24	1.7	5.5	7.9	9.8	55	25	200	24	3.6	.54	.03	.02
25	2.3	1.4	7.6	8.9	41	21	166	20	3.0	.14	.03	.02
26	2.3	2.7	7.4	7.6	30	18	50	18	2.0	.08	.02	.02
27	1.6	3.3	6.9	7.4	25	48	42	16	2.3	.03	.02	.02
28	1.7	4.4	6.6	7.1	22	61	34	14	3.0	.03	.02	.02
29	1.7	20	6.6	6.6	---	38	30	14	8.1	.02	.02	.02
30	1.7	16	5.7	6.9	---	27	24	14	6.8	.02	.02	.05
31	1.8	---	6.6	6.9	---	23	---	12	---	.02	.02	---
TOTAL	48.54	260.3	308.2	210.9	678.2	970	2388	660.0	182.3	62.13	1.34	.77
MEAN	1.57	8.68	9.94	6.80	24.2	31.3	79.6	21.3	6.08	2.00	.043	.026
MAX	2.3	86	39	14	66	82	495	96	15	11	.21	.11
MIN	.92	1.4	5.0	3.7	6.2	13	20	8.1	2.0	.02	.02	.02
CFSM	.13	.71	.81	.55	1.97	2.55	6.47	1.73	.49	.16	.003	.002
IN.	.15	.79	.93	.64	2.05	2.93	7.22	2.00	.55	.19	.00	.00

CAL YR 1982 TOTAL 4081.45 MEAN 11.2 MAX 167 MIN .38 CFSM .91 IN 12.35
WTR YR 1983 TOTAL 5773.08 MEAN 15.8 MAX 495 MIN .02 CFSM 1.29 IN 17.47

01656000 CEDAR RUN NEAR CATLETT, VA

LOCATION.--Lat 38°38'12", long 77°37'31", Fauquier County, Hydrologic Unit 02070010, on right bank 100 ft downstream from bridge on State Highway 806, 0.9 mi downstream from Licking Run, and 1.4 mi southeast of Catlett.

DRAINAGE AREA.--93.4 mi².

PERIOD OF RECORD.--July 1950 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-79-1: 1973-77(P).

GAGE.--Water-stage recorder. Datum of gage is 199.15 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 88.1 ft³/s, 12.81 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,600 ft³/s June 22, 1972, gage height, 27.66 ft, from floodmarks, from rating curve extended above 5,000 ft³/s on basis of contracted-opening measurement of peak flow; no flow many days in 1954, 1957, 1959, 1963, 1964, 1966, and 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of about 22 ft, discharge not determined, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 10	1600	4490	12.41	Apr. 24	1730	4380	12.27
Apr. 15	2400	*4840	12.85				

No flow Sept. 5-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	5.4	172	23	29	137	121	90	41	11	.60	.03
2	3.0	5.3	169	22	176	167	101	76	39	9.6	.47	.02
3	2.7	5.4	90	21	331	103	358	69	33	8.2	.34	.01
4	2.6	48	67	19	137	88	168	66	65	38	.29	.01
5	2.5	310	52	18	82	73	122	55	47	16	2.1	.00
6	2.7	56	43	21	69	65	112	46	32	11	9.6	.00
7	2.8	28	34	22	82	108	166	46	30	9.3	2.0	.00
8	3.3	20	27	19	109	1020	222	44	26	6.6	1.4	.00
9	3.6	15	25	16	87	567	666	66	23	4.8	1.0	.00
10	3.8	13	21	48	72	341	3230	44	20	4.0	1.1	.00
11	4.2	11	21	163	72	213	1480	37	18	3.9	1.4	.00
12	4.5	9.8	29	81	90	156	472	32	16	3.4	1.6	.00
13	5.1	21	30	49	100	117	257	29	15	3.1	3.8	.07
14	8.8	19	27	40	110	95	194	28	14	2.7	2.3	.66
15	8.2	11	31	38	130	86	1650	31	13	2.9	1.3	2.7
16	5.4	12	530	35	190	72	1740	584	12	2.2	.92	1.6
17	4.4	7.9	223	27	292	62	337	414	11	2.0	1.0	1.1
18	3.5	8.5	110	24	393	170	235	144	19	3.1	.70	.59
19	3.6	8.1	80	23	460	727	180	100	16	4.1	.50	.36
20	4.3	8.0	75	20	397	260	147	95	12	3.3	.37	.24
21	5.0	8.8	70	16	415	395	126	292	13	10	.39	.38
22	5.3	9.0	51	17	460	252	106	300	25	8.5	.36	6.9
23	5.1	8.5	43	41	550	154	94	213	17	4.4	.26	5.7
24	5.0	8.5	41	89	363	124	2540	122	11	2.7	.15	2.1
25	12	15	37	60	226	106	668	88	8.8	1.6	.09	1.2
26	45	6.4	36	47	215	86	270	89	7.5	1.4	.07	.05
27	22	5.5	33	42	162	365	187	62	5.8	1.3	.06	.44
28	11	10	30	38	135	754	148	55	5.5	1.2	.13	.27
29	7.3	430	31	33	---	235	122	57	16	1.0	.14	.20
30	5.6	133	26	32	---	150	104	64	10	1.4	.17	.08
31	5.7	---	26	32	---	136	---	52	---	.09	.05	---
TOTAL	211.9	1257.1	2280	1176	5934	7384	16323	3490	627.6	184.39	34.46	26.99
MEAN	6.84	41.9	73.5	37.9	212	238	544	113	20.9	5.95	1.11	.90
MAX	45	430	530	163	550	1020	3230	584	65	38	9.6	6.9
MIN	2.5	5.3	21	16	29	62	94	28	5.5	.09	.05	.00
CFSM	.07	.45	.79	.41	2.27	2.55	5.82	1.21	.22	.06	.01	.01
IN.	.08	.50	.91	.47	2.36	2.94	6.50	1.38	.25	.07	.01	.01

CAL YR 1982 TOTAL 33251.60 MEAN 91.1 MAX 2560 MIN .43 CFSM .98 IN 13.25
WTR YR 1983 TOTAL 38929.44 MEAN 107 MAX 3230 MIN .00 CFSM 1.14 IN 15.50

01656100 CEDAR RUN NEAR ADEN, VA

LOCATION.--Lat 38°36'58", long 77°33'16", Prince William County, Hydrologic Unit 02070010, on left bank at upstream side of bridge on State Highway 611, 0.5 mi downstream from Darrels Run, 0.8 mi downstream from Town Run, and 3.0 mi southwest of Aden.

DRAINAGE AREA.--155 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 166.27 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Occasional diurnal fluctuation during low flow caused by irrigation dam 4.5 mi above gage. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--11 years, 189 ft³/s, 16.56 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,900 ft³/s Oct. 1, 1979, gage height, 15.29 ft, from rating curve extended above 6,600 ft³/s; minimum daily, 0.25 ft³/s Oct. 14, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 21.37 ft, from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 8	1200	4050	10.65	Apr. 16	0130	*9100	13.40
Apr. 10	1830	6730	12.32	Apr. 24	1900	7610	12.74

Minimum discharge, 0.40 ft³/s Sept. 18-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	7.2	373	35	45	180	157	120	59	14	3.7	1.3
2	5.9	6.7	369	35	372	281	131	105	53	11	3.0	1.3
3	4.8	7.0	160	33	724	159	618	94	47	9.8	2.5	1.2
4	4.1	41	120	32	237	127	255	88	75	28	2.8	1.2
5	4.1	433	93	29	138	110	168	77	70	32	7.1	1.0
6	4.1	84	77	31	117	99	146	66	47	16	3.9	1.2
7	4.1	45	59	32	136	135	237	63	40	11	12	1.0
8	4.1	31	44	30	187	2400	359	59	36	9.8	4.2	.76
9	4.2	24	41	26	152	1260	1240	84	31	7.8	3.2	.76
10	4.3	20	38	58	124	428	5740	62	29	7.1	2.8	.63
11	4.5	18	35	281	109	350	4650	50	24	6.4	3.2	.63
12	4.7	16	45	135	110	227	756	45	22	5.9	3.5	.76
13	4.9	38	48	84	116	165	399	39	20	5.3	2.8	5.3
14	8.5	43	40	65	130	135	279	38	20	5.3	2.3	10
15	7.0	27	40	60	145	124	2840	39	17	5.0	2.1	2.3
16	6.0	22	1080	53	227	105	4820	680	16	5.3	2.1	1.2
17	5.3	20	412	43	380	90	530	865	15	6.4	2.1	.76
18	5.0	16	170	36	716	190	341	187	28	6.4	2.1	.63
19	4.8	16	127	33	881	1240	265	122	35	5.3	2.1	.50
20	4.5	16	117	28	740	384	188	117	22	5.3	2.0	.50
21	4.3	16	113	24	750	690	157	664	18	5.3	1.8	.89
22	4.1	16	85	25	848	427	136	518	26	6.8	1.8	1.8
23	4.0	16	72	56	1060	218	124	318	25	5.3	1.7	24
24	4.3	16	66	140	696	165	6550	159	18	6.2	1.8	2.0
25	4.5	17	60	104	360	136	2490	115	11	5.7	1.5	.76
26	71	16	57	62	310	119	416	91	9.0	5.5	1.4	.63
27	38	11	53	74	225	457	266	115	8.0	5.0	1.4	.63
28	19	12	48	62	182	1040	195	80	6.8	6.4	1.7	.76
29	12	1040	44	53	---	394	159	74	6.4	6.4	1.7	.89
30	8.5	271	44	50	---	227	130	89	19	3.9	1.4	1.3
31	7.6	---	38	51	---	176	---	69	---	3.5	1.4	---
TOTAL	276.4	2361.5	4182	1886	10245	13330	32936	5292	854.0	257.1	87.1	66.59
MEAN	8.91	78.7	135	60.8	366	430	1098	171	28.5	8.29	2.81	2.22
MAX	71	1040	1080	281	1060	2400	6550	865	75	32	12	24
MIN	4.0	6.7	35	24	45	90	124	38	6.4	3.5	1.4	.50
CFSM	.06	.51	.87	.39	2.36	2.77	7.08	1.10	.18	.05	.02	.01
IN.	.07	.57	1.00	.45	2.46	3.20	7.90	1.27	.20	.06	.02	.02

CAL YR 1982 TOTAL [illegible] MEAN 172 MAX 5320 MIN 4.0 CFSM 1.11 IN 15.09
WTR YR 1983 TOTAL [illegible] MEAN 196 MAX 6550 MIN .50 CFSM 1.27 IN 17.16

01656500 BROAD RUN AT BUCKLAND, VA

LOCATION.--Lat 38°46'50", long 77°40'22", Prince William County, Hydrologic Unit 02070010, on right bank at downstream side of bridge on U.S. Highway 29 at Buckland and 1.1 mi upstream from South Run.

DRAINAGE AREA.--50.5 mi².

PERIOD OF RECORD.--July 1950 to September 1979, October 1980 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 284.58 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 51.6 ft³/s, 13.88 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,800 ft³/s June 21, 1972, gage height, 13.92 ft, from rating curve extended above 3,200 ft³/s on basis of slope-area measurements at gage heights 13.08 ft and 13.92 ft; minimum, 0.20 ft³/s Oct. 10, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 4	2130	1740	6.43	Apr. 24	1130	2090	7.01
Apr. 10	1000	*2850	8.10	May 26	1700	1070	5.24
Apr. 15	1730	1900	6.70				

Minimum discharge, 1.9 ft³/s Sept. 19, 20-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	14	80	24	25	111	86	91	40	27	5.0	2.6
2	12	14	78	24	103	117	78	84	40	24	5.4	2.7
3	11	14	58	24	158	91	241	80	37	21	5.0	2.4
4	10	454	50	22	84	78	131	71	46	24	4.6	2.2
5	7.6	263	44	22	58	71	103	58	39	19	11	2.4
6	7.3	76	39	24	54	64	95	55	38	19	10	2.4
7	7.4	50	34	23	55	91	107	50	95	16	6.8	2.4
8	7.6	40	30	22	54	311	128	54	48	15	5.7	2.2
9	8.0	35	30	21	46	257	235	58	35	14	4.6	2.1
10	8.3	31	26	45	42	184	1660	45	31	13	4.6	2.1
11	8.7	29	28	93	22	138	567	42	10	12	4.6	2.1
12	8.7	29	32	50	27	109	273	38	28	11	10	2.1
13	10	45	29	38	40	89	197	36	26	11	7.7	13
14	14	35	27	35	52	78	148	35	25	9.6	5.7	11
15	12	30	28	33	54	71	892	42	24	9.2	5.0	3.9
16	11	27	237	31	70	63	618	433	25	8.7	3.9	2.9
17	12	25	138	27	89	56	254	271	24	8.2	3.2	2.4
18	12	24	82	23	131	153	195	117	23	8.2	4.6	2.1
19	13	24	64	20	158	479	150	91	24	8.2	5.4	2.1
20	13	23	58	22	156	208	124	82	24	9.6	4.6	1.9
21	14	23	50	22	169	223	105	157	70	11	3.2	2.4
22	14	23	42	23	202	163	91	174	65	10	2.9	8.2
23	13	23	38	37	249	124	89	145	29	7.7	3.0	3.6
24	13	23	35	55	223	105	1180	97	24	7.3	5.0	2.7
25	81	20	34	40	176	89	450	78	21	6.8	4.3	2.4
26	118	19	33	35	158	75	231	66	19	6.6	3.2	2.4
27	37	21	30	33	122	223	169	58	17	6.4	2.7	2.4
28	26	25	31	30	111	246	138	52	28	6.1	2.4	2.4
29	19	192	30	28	---	138	115	56	113	5.6	2.7	2.4
30	16	82	27	27	---	167	103	55	35	5.4	2.6	5.2
31	16	---	25	27	---	95	---	48	---	5.0	2.4	---
TOTAL	571.6	1733	1567	980	2888	4407	8953	2819	1103	365.6	151.8	101.1
MEAN	18.4	57.8	50.5	31.6	103	142	298	90.9	36.8	11.8	4.90	3.37
MAX	118	454	237	93	249	479	1660	433	113	27	11	13
MIN	7.3	14	25	20	22	56	78	35	17	5.0	2.4	1.9
CFSM	.36	1.14	1.00	.63	2.04	2.81	5.91	1.80	.73	.23	.10	.07
IN.	.42	1.28	1.15	.72	2.13	3.25	6.59	2.08	.81	.27	.11	.07

CAL YR 1982 TOTAL 19956.7 MEAN 54.7 MAX 793 MIN 6.6 CFSM 1.08 IN 14.70
WTR YR 1983 TOTAL 25640.1 MEAN 70.2 MAX 1660 MIN 1.9 CFSM 1.39 IN 18.88

01656650 BROAD RUN NEAR BRISTOW, VA

LOCATION.--Lat 38°44'56", long 77°33'50", Prince William County, Hydrologic Unit 02070010, on left bank 50 ft downstream from bridge on State Highway 619, 0.2 mi upstream from Dawkins Branch, 1.9 mi downstream from Rocky Branch, and 2.3 mi northwest of Bristow.

DRAINAGE AREA.--89.6 mi².

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 185 ft, from topographic map.

REMARKS.--Records good. Town of Manassas diverts about 3.0 ft³/s daily from municipal water-supply reservoir 6.0 mi upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--[illegible] years, 99.3 ft³/s, 15.05 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,800 ft³/s Oct. 9, 1976, gage height, 16.11 ft, from rating curve extended above 4,100 ft³/s; minimum, 0.90 ft³/s Sept. 30, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 27	2100	1130	6.40	Apr. 24	1800	2910	10.64
Apr. 10	1600	*3750	12.08	May 16	1830	1220	6.66
Apr. 15	1830	2920	10.67				

Minimum daily discharge, 4.8 ft³/s Sept. 1, 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	25	177	30	34	166	138	122	44	24	7.3	4.8
2	9.6	25	171	27	133	194	117	107	38	16	7.3	5.1
3	9.2	25	127	29	320	143	332	97	34	13	7.3	5.1
4	8.4	122	102	26	196	119	266	97	44	11	7.3	5.4
5	8.4	600	84	24	114	107	174	76	45	10	8.4	5.4
6	8.0	194	72	26	89	95	143	66	34	8.4	8.8	5.4
7	7.6	100	61	26	97	114	174	61	50	7.0	8.0	5.4
8	8.0	61	47	26	107	649	230	59	59	6.4	8.0	5.4
9	8.0	45	45	23	84	606	473	80	34	5.4	7.3	5.4
10	8.0	35	35	45	74	386	2880	59	22	6.7	7.6	5.4
11	7.6	27	32	146	60	263	1460	49	18	5.7	7.3	5.4
12	7.6	22	49	122	64	205	542	47	16	7.0	8.0	5.4
13	9.2	45	47	72	68	135	323	42	14	13	7.6	6.7
14	10	34	38	55	72	107	242	41	12	8.0	7.6	6.7
15	12	42	38	50	74	105	1330	44	11	6.7	7.3	6.4
16	13	32	379	55	109	93	1590	499	9.9	7.6	7.3	6.0
17	19	30	314	27	180	80	464	722	9.2	7.3	7.3	6.0
18	21	32	176	26	296	135	308	245	9.6	8.4	7.3	5.7
19	18	32	119	24	365	662	239	154	8.8	7.3	7.3	5.7
20	19	34	97	17	350	404	180	130	14	8.0	7.0	5.4
21	21	35	84	16	350	406	149	205	12	8.0	6.7	5.7
22	20	35	63	16	377	329	127	335	39	8.0	6.7	6.0
23	18	35	57	34	479	208	117	272	25	7.6	6.7	5.1
24	17	50	53	82	419	157	1750	174	19	8.0	6.7	5.1
25	39	27	50	78	296	135	1150	117	14	8.0	6.7	5.1
26	102	16	49	64	254	109	413	91	9.9	7.6	6.4	5.1
27	97	26	45	55	199	310	263	76	7.6	7.6	6.4	5.1
28	57	32	44	49	171	659	196	61	7.3	7.6	6.0	4.8
29	31	287	44	39	---	311	160	57	36	8.0	6.4	4.8
30	26	208	39	38	---	191	135	63	65	12	16	6.0
31	23	---	36	36	---	154	---	59	---	7.3	6.4	---
TOTAL	671.8	2313	2770	1381	5431	7735	16065	4307	761.3	277.6	232.4	165.0
MEAN	21.7	77.1	89.4	44.5	194	250	536	139	25.4	8.95	7.50	5.50
MAX	102	600	379	146	479	662	2880	722	65	24	16	6.7
MIN	7.6	16	32	16	34	80	117	41	7.3	5.4	6.0	4.8
CFSM	.24	.86	1.00	.50	2.17	2.79	5.98	1.55	.28	.10	.08	.06
IN.	.28	.96	1.15	.57	2.25	3.21	6.67	1.79	.31	.12	.10	.07

CAL YR 1982 TOTAL 34889.3 MEAN 95.6 MAX 1520 MIN 5.1 CFSM 1.07 IN 14.49
WTR YR 1983 TOTAL 42089.9 MEAN 115 MAX 2880 MIN 4.8 CFSM 1.28 IN 17.47

01656725 BULL RUN NEAR CATHARPIN, VA

LOCATION.--Lat 38°53'21", long 77°34'14", Prince William County, Hydrologic Unit 02070010, on right bank 20 ft downstream from bridge on State Highway 705, 0.7 mi downstream from Chestnut Lick, 2.5 mi north of Catharpin, and 6.7 mi northeast of Gainesville.

DRAINAGE AREA.--25.8 mi².

PERIOD OF RECORD.--May 1969 to current year. Prior to October 1970, published as "on State Highway 705."

REVISED RECORDS.--WDR VA-75-1: 1974(P).

GAGE.--Water-stage recorder. Datum of gage is 237.78 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--14 years, 34.0 ft³/s, 17.90 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,400 ft³/s June 22, 1972, gage height, 18.92 ft, from floodmarks, from rating curve extended above 3,000 ft³/s on basis of slope-area measurement of peak flow; no flow many days in 1970, 1977, 1980, and 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 820 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 8	0400	905	5.13	Apr. 15	1530	2080	7.01
Mar. 8	2030	880	5.08	Apr. 24	1100	2220	7.22
Mar. 27	1930	1200	5.65	May 16	1600	1280	5.78
Apr. 9	2330	1710	6.47	June 6	2000	1020	5.34
Apr. 10	0800	*2940	8.16	June 28	2200	1130	5.54

No flow Aug. 31 to Sept. 13, Sept. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.57	3.6	46	7.9	10	47	33	29	12	8.3	.18	.00
2	.66	4.4	39	7.5	113	53	32	26	10	5.5	.15	.00
3	.57	5.0	26	6.7	77	35	186	23	9.5	4.7	.14	.00
4	.48	146	23	6.3	36	30	54	21	12	3.9	.13	.00
5	.39	50	19	6.3	24	27	42	19	10	3.9	1.3	.00
6	.48	14	17	7.5	23	26	41	16	181	3.3	1.2	.00
7	.57	9.5	14	7.1	26	41	67	14	85	2.5	.66	.00
8	.57	7.1	12	6.7	27	1230	97	15	24	2.0	.30	.00
9	.66	5.9	11	6.3	23	162	294	16	15	1.8	.21	.00
10	.66	5.2	10	31	20	103	1160	12	12	1.8	.15	.00
11	.57	5.0	11	50	12	65	247	12	11	1.7	.14	.00
12	.57	5.2	14	24	12	48	95	10	9.5	1.7	.54	.00
13	.75	12	12	16	12	37	71	10	8.3	1.5	1.0	.00
14	2.0	8.3	12	14	18	31	58	10	7.1	1.4	.57	.01
15	2.2	6.7	13	14	20	28	799	13	6.3	1.1	.27	.00
16	1.5	5.5	229	12	53	24	216	356	6.3	1.1	.21	.06
17	1.1	5.2	54	11	78	22	93	82	5.5	1.0	.14	.11
18	1.1	5.2	38	10	127	87	72	36	5.5	.93	.13	.09
19	1.0	5.0	22	8.3	143	100	57	26	5.9	.93	.11	.06
20	.93	5.2	20	7.5	123	63	46	26	5.9	1.4	.08	.03
21	1.0	5.2	10	7.5	167	157	39	84	57	3.6	.03	.06
22	1.1	5.2	14	8.3	104	69	33	73	13	1.5	.01	.40
23	1.2	5.2	13	21	248	47	32	57	8.3	1.0	.01	.38
24	1.2	5.5	12	20	119	38	919	38	5.9	.84	.02	.18
25	11	5.2	11	19	86	32	201	22	5.0	.75	.04	.13
26	29	5.2	11	16	71	26	63	21	4.4	.66	.15	.09
27	7.5	5.0	10	14	53	268	62	18	3.9	.57	.13	.08
28	4.6	6.3	10	13	46	133	50	16	137	.48	.08	.08
29	3.6	178	9.5	12	---	82	41	18	91	.27	.04	.06
30	3.6	36	8.7	12	---	65	36	16	12	.24	.02	.50
31	3.6	---	7.9	12	---	38	---	13	---	.21	.00	---
TOTAL	84.53	571.0	759.1	422.9	1937	3255	5256	1137	766.3	60.58	8.12	2.38
MEAN	2.73	19.0	24.5	13.6	69.2	105	175	36.7	25.5	1.95	.26	.079
MAX	29	178	229	50	248	1230	1160	356	181	8.3	1.3	.50
MIN	.39	3.6	7.9	6.3	10	22	32	10	3.9	.21	.00	.00
CFSM	.11	.74	.95	.53	2.68	4.07	6.78	1.42	.99	.08	.01	.003
IN.	.12	.82	1.09	.61	2.79	4.69	7.58	1.64	1.10	.09	.01	.00

CAL YR 1982 TOTAL 10529.25 MEAN 28.8 MAX 700 MIN .06 CFSM 1.12 IN 15.18
WTR YR 1983 TOTAL 14241.68 MEAN 39.0 MAX 1230 MIN .00 CFSM 1.51 IN 20.53

01656960 CUB RUN NEAR BULL RUN, VA

LOCATION.--Lat 38°49'16", long 77°27'57", Fairfax County, Hydrologic Unit 02070010, on right bank 20 ft downstream from bridge on State Highway 658, 0.6 mi downstream from Big Rocky Run, 1.2 mi southeast of Bull Run, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--49.9 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 151.54 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--11 years, 57.2 ft³/s, 15.57 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s Oct. 1, 1979, gage height, 16.43 ft, from rating curve extended above 4,100 ft³/s; minimum daily, 0.10 ft³/s Oct. 23, 1980, Sept. 30, Oct. 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of 28.64 ft, from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 10	1100	2250	10.77	Apr. 15	2330	*3570	12.23

Minimum discharge, 0.50 ft³/s Sept. 1-2, 3, 4-5, 8-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	5.1	65	9.8	13	45	33	27	12	12	1.6	.57
2	3.8	4.8	89	9.1	114	142	29	24	9.9	8.8	1.8	.50
3	3.1	4.6	36	8.8	325	60	230	25	9.2	6.8	1.6	.57
4	2.9	98	27	8.2	76	36	76	22	14	98	1.5	.57
5	2.7	163	22	8.2	33	30	43	19	17	65	2.1	.57
6	2.4	26	18	9.5	27	25	35	16	49	16	2.2	.57
7	2.2	16	14	10	32	32	81	15	301	9.5	1.8	.64
8	2.7	12	12	9.5	67	286	164	16	43	7.1	1.6	.57
9	3.1	10	10	8.8	40	288	352	20	22	5.8	1.6	.50
10	2.7	10	9.5	51	29	169	1540	15	16	4.6	1.3	.71
11	3.1	7.2	9.5	197	25	92	384	12	12	4.3	1.9	.64
12	2.3	6.9	11	58	24	56	157	11	10	4.1	6.1	.71
13	3.8	10	12	29	24	37	92	9.5	8.8	3.6	3.1	14
14	6.2	9.5	11	22	26	29	66	9.2	8.1	3.6	2.1	11
15	5.4	9.1	12	19	30	26	965	9.9	8.1	3.1	1.6	3.4
16	4.6	8.2	500	16	65	23	1020	394	7.4	3.1	1.3	2.4
17	4.8	7.2	142	14	143	20	130	287	6.8	2.6	1.0	1.9
18	3.8	6.6	54	12	254	49	95	58	7.4	2.4	1.6	1.6
19	3.6	6.2	32	10	293	290	67	32	12	2.4	2.1	1.6
20	3.6	5.6	29	8.8	244	98	51	31	7.1	16	1.8	1.6
21	4.6	5.6	27	8.2	251	288	40	136	44	47	1.3	9.0
22	4.8	5.1	22	8.2	308	152	36	167	18	13	.71	16
23	4.4	5.1	18	23	378	67	32	103	11	5.8	.78	4.8
24	4.1	5.4	17	62	230	42	842	44	7.8	5.5	1.6	2.9
25	35	5.4	15	35	125	34	260	29	6.8	4.1	1.6	2.1
26	136	5.1	14	25	82	27	100	23	5.5	3.4	1.3	1.5
27	27	4.8	14	22	55	172	64	21	4.8	2.6	1.0	1.3
28	12	7.2	13	19	43	472	45	16	18	2.2	.65	1.5
29	8.5	284	12	16	---	102	36	17	132	2.1	.65	1.3
30	6.2	66	12	15	---	56	31	18	21	1.9	.64	7.9
31	5.6	---	11	14	---	41	---	15	---	1.8	.65	---
TOTAL	319.6	819.7	1290.0	766.1	3356	3286	7096	1641.6	849.7	368.2	51.10	92.92
MEAN	10.3	27.3	41.6	24.7	120	106	237	53.0	28.3	11.9	1.65	3.10
MAX	136	284	500	197	378	472	1540	394	301	98	6.1	16
MIN	2.2	4.6	9.5	8.2	13	20	29	9.2	4.8	1.8	.64	.50
CFSM	.21	.55	.83	.51	2.41	2.12	4.75	1.06	.57	.24	.03	.06
IN.	.24	.61	.96	.57	2.50	2.45	5.29	1.22	.63	.27	.04	.07

CAL YR 1982 TOTAL 18979.16 MEAN 52.0 MAX 1510 MIN .64 CFSM 1.04 IN 14.15
WTR YR 1983 TOTAL 19936.92 MEAN 54.6 MAX 1540 MIN .50 CFSM 1.09 IN 14.86

01657415 BULL RUN NEAR CLIFTON, VA

LOCATION.--Lat 38°45'59", long 77°24'52", Fairfax County, Hydrologic Unit 02070010, on left bank 0.6 mi downstream from Popes Head Creek, 1.6 mi upstream from Buckhall Branch, and 1.8 mi southwest of Clifton.

DRAINAGE AREA.--185 mi^2.

PERIOD OF RECORD.--September 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 120.24 ft National Geodetic Vertical Datum of 1929. September 1972 to June 1978, at site 500 ft upstream at datum 3.59 ft higher.

REMARKS.--Records good except those above 700 ft^3/s, which are fair. Slight diurnal fluctuation caused by Upper Occoquan Sewage Authority treatment plant 4.8 mi upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--11 years, 222 ft^3/s, 16.30 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft^3/s Sept. 26, 1975, gage height, 19.52 ft, datum then in use, from rating curve extended above 400 ft^3/s on basis of runoff comparison with upstream station near Manassas; minimum, 4.6 ft^3/s Sept. 21, 1982, gage height, 1.85 ft, from recorded range in stage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1972 reached a stage of about 35 ft, discharge, about 80,000 ft^3/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 10	Unknown	9220	a15.40	Apr. 24	Unknown	5500	b12.3
Apr. 16	Unknown	*9700	b15.8				

a From floodmarks.
b About.

Minimum discharge, 6.1 ft^3/s Oct. 23-24, gage height, 1.92 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	27	267	56	70	240	219	171	84	74	16	13
2	25	25	374	54	224	451	187	150	78	56	16	12
3	20	20	191	55	916	268	750	137	72	46	16	12
4	18	159	142	53	323	200	390	128	91	270	17	12
5	18	580	115	50	187	165	252	112	84	345	58	12
6	16	123	100	53	150	143	218	104	89	87	22	11
7	16	77	89	56	173	180	321	94	666	58	18	12
8	15	56	75	53	242	1010	538	98	182	45	16	10
9	15	48	64	50	192	1090	965	113	103	36	16	10
10	14	44	57	99	152	663	5720	92	82	31	14	9.8
11	8.8	38	56	538	130	438	2160	83	74	28	15	10
12	8.8	34	67	241	120	303	730	79	65	28	34	11
13	18	67	69	134	120	227	455	76	59	25	23	57
14	25	61	61	105	140	183	350	70	57	25	17	64
15	22	52	63	94	177	150	2320	72	51	24	16	24
16	20	44	1060	86	201	136	4400	1120	49	23	14	15
17	18	39	522	74	472	118	656	1400	44	21	13	12
18	16	31	238	65	735	210	494	301	46	19	15	11
19	15	30	167	62	806	949	364	183	52	20	29	12
20	20	27	145	50	770	447	287	176	49	38	14	12
21	35	27	137	49	759	851	242	429	163	196	13	43
22	20	28	111	48	898	600	212	702	106	57	12	96
23	9.2	28	99	101	1090	323	192	499	67	36	10	29
24	9.8	27	90	219	820	230	3300	260	51	29	12	20
25	77	26	86	155	494	201	2000	173	42	27	13	18
26	323	28	83	116	396	155	549	132	37	26	13	15
27	124	27	79	98	294	301	380	124	36	26	12	13
28	68	30	71	90	262	1710	294	104	36	22	16	12
29	60	773	70	81	---	407	232	101	477	18	21	11
30	36	319	66	76	---	312	200	118	122	18	16	20
31	29	---	60	76	---	252	---	98	---	16	12	---
TOTAL	1137.6	2091	4876	3136	11668	13080	29377	7501	3190	1764	536	622.0
MEAN	36.7	69.6	157	101	417	422	979	242	106	56.9	17.3	20.7
MAX	323	773	1060	538	1090	1710	5720	1400	666	345	58	96
MIN	8.8	20	56	48	70	118	187	70	36	16	11	9.8
CFSM	.20	.38	.85	.55	2.25	2.28	5.29	1.31	.57	.31	.09	.11
IN.	.23	.42	.98	.63	2.35	2.63	5.91	1.51	.64	.35	.11	.13

CAL YR 1982 TOTAL 66961.6 MEAN 183 MAX 3200 MIN 8.8 CFSM .99 IN 13.45
WTR YR 1983 TOTAL 79080.6 MEAN 217 MAX 5720 MIN 8.8 CFSM 1.18 IN 15.90

01658480 QUANTICO CREEK NEAR DUMFRIES, VA

LOCATION.--Lat 38°34'22", long 77°20'51", Prince William County, Hydrologic Unit 02070011, on left bank at upstream side of bridge on pyrite mine trail in Prince William Forest Park, 50 ft upstream from South Fork Quantico Creek, and 0.7 mi west of Dumfries.

DRAINAGE AREA.--6.90 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September 1983.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period May to September, 39 ft³/s May 21, gage height, 2.26 ft; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	4.7	1.4	.00	.00
2								---	4.6	1.8	.00	.00
3								---	4.3	2.0	.00	.00
4								---	6.6	1.5	.03	.00
5								---	5.4	1.7	.13	.00
6								---	4.4	1.5	.00	.00
7								---	4.9	1.2	.00	.00
8								---	4.5	.96	.29	.00
9								---	3.8	.91	.21	.00
10								---	3.5	.87	.17	.00
11								---	3.1	.90	.19	.00
12								---	3.0	.82	.25	.01
13								---	2.8	.72	.21	.42
14								---	2.7	.62	.19	.47
15								---	2.5	.50	.15	.26
16								---	2.3	.46	.10	.18
17								---	2.2	.40	.07	.13
18								---	2.0	.34	.05	.10
19								6.8	2.0	.28	.02	.10
20								7.2	2.3	.82	.00	.05
21								16	2.6	1.7	.00	.12
22								21	2.6	.92	.00	.51
23								15	2.2	.61	.00	.57
24								8.9	1.9	.40	.00	.31
25								7.2	1.8	.35	.00	.19
26								6.3	1.7	.33	.00	.15
27								6.3	1.5	.28	.00	.12
28								5.8	1.2	.21	.05	.11
29								6.3	1.2	.18	.03	.10
30								6.6	1.4	.15	.00	.63
31								5.4	---	.11	.00	---
TOTAL								---	89.7	24.96	2.14	4.53
MEAN								---	2.99	.80	.069	.15
MAX								---	6.6	2.0	.29	.63
MIN								---	1.2	.11	.00	.00
CFSM								---	.43	.12	.01	.02
IN.								---	.48	.13	.01	.02

01658480 QUANTICO CREEK NEAR DUMFRIES, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March to September 1983.

WATER QUALITY DATA, MARCH TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAR									
17...	1020	5.6	83	--	9.0	--	--	--	--
30...	1025	12	85	--	7.0	--	--	--	--
APR									
20...	0930	12	75	--	6.0	--	--	--	--
MAY									
25...	1000	7.2	76	--	16.5	--	--	--	--
JUN									
24...	1230	1.0	--	--	--	--	--	--	--
29...	1150	1.2	105	--	22.0	--	--	--	--
JUL									
19...	1035	.28	240	--	24.5	--	--	--	--
AUG									
24...	1015	<.01	825	--	23.0	--	--	--	--
SEP									
21...	1000	.03	500	--	21.0	--	--	--	--
23...	1030	.58	180	6.2	13.5	67	58	16	6.6

< Actual value is known to be less than the value shown.

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
MAR									
17...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
APR									
20...	--	--	--	--	--	--	--	--	--
MAY									
25...	--	--	--	--	--	--	--	--	--
JUN									
24...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
JUL									
19...	--	--	--	--	--	--	--	--	--
AUG									
24...	--	--	--	--	--	--	--	--	--
SEP									
21...	--	--	--	--	--	--	--	--	--
23...	6.7	2.1	9.0	60	2.5	8.6	116	<.10	60

< Actual value is known to be less than the value shown.

DATE	ARSENIC TOTAL (UG/L AS AS)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)
MAR									
17...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
APR									
20...	--	--	--	--	--	--	--	--	--
MAY									
25...	--	--	--	--	--	--	--	--	--
JUN									
24...	--	--	--	--	--	--	--	--	5
29...	--	--	--	--	--	--	--	--	--
JUL									
19...	--	--	--	--	--	--	--	--	--
AUG									
24...	--	--	--	--	--	--	--	--	--
SEP									
21...	--	--	--	--	--	--	--	--	--
23...	1	200	1900	1200	<100	630	650	1300	--

< Actual value is known to be less than the value shown.

01658500 SOUTH FORK QUANTICO CREEK NEAR INDEPENDENT HILL, VA

LOCATION.--Lat 38°35'14", long 77°25'44", Prince William County, Hydrologic Unit 02070011, on left bank at upstream side of bridge on State Highway 619, 3.4 mi south of Independent Hill, 5.6 mi west of Dumfries, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--7.64 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 238.88 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--32 years, 6.84 ft³/s, 12.16 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,940 ft³/s June 21, 1972, gage height, 11.35 ft; no flow at times in 1954, 1957, 1962-66, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 699 ft³/s Apr. 15, gage height, 7.67 ft, no other peak above base of 200 ft³/s; no flow at times during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.99	9.3	1.6	2.2	8.8	7.4	6.8	2.5	1.3	.00	.04
2	.18	1.6	7.7	1.5	9.6	15	6.7	6.4	2.4	1.4	.00	.04
3	.04	2.0	4.0	1.5	13	7.8	26	5.9	2.3	1.4	.00	.04
4	.11	4.1	2.9	1.4	5.4	6.2	11	5.5	6.8	1.3	.00	.04
5	.14	5.4	2.4	1.5	3.9	5.4	8.0	4.9	3.7	1.3	.00	.04
6	.27	1.7	2.2	1.8	3.5	5.1	7.5	4.4	2.5	1.4	.89	.00
7	.45	1.2	1.8	1.8	4.4	4.1	11	4.1	3.5	1.2	.73	.00
8	.45	.85	1.5	1.4	5.9	77	15	4.5	2.7	1.1	.40	.00
9	.52	.67	1.4	1.4	5.1	33	26	6.0	2.2	.96	.35	.00
10	.60	.60	1.3	5.3	4.4	26	122	4.2	1.7	.67	.29	.00
11	.69	.60	1.5	10	3.4	14	101	3.9	1.6	.52	.21	.00
12	.79	.61	2.2	4.5	5.4	9.2	30	3.7	1.4	.43	.26	.00
13	1.1	2.2	1.9	3.1	5.4	6.8	22	3.4	1.3	.28	.22	.16
14	1.4	1.6	1.7	2.6	5.4	5.9	19	3.3	1.1	.18	.17	1.1
15	1.4	1.1	2.0	2.4	5.6	5.6	215	3.3	1.0	.19	.08	.38
16	1.4	.88	28	2.2	8.8	5.1	82	51	1.0	.17	.05	.15
17	1.4	.79	8.5	2.0	14	4.6	22	23	.90	.08	.00	.09
18	1.3	.75	4.5	1.8	23	16	15	9.1	1.2	.11	.00	.07
19	1.4	.69	3.3	1.7	23	33	12	6.7	1.6	.10	.00	.06
20	1.5	.69	3.1	1.6	20	12	9.8	7.3	2.2	.12	.00	.05
21	1.8	.49	2.7	1.7	21	53	8.3	22	3.0	.74	.00	.10
22	1.9	.59	2.3	1.8	23	19	7.5	19	2.7	.52	.00	.26
23	1.8	.44	2.1	5.1	25	10	7.5	13	2.0	.41	.00	.26
24	1.8	.88	2.0	5.4	17	7.8	109	6.3	1.5	.31	.00	.15
25	3.3	1.0	1.8	3.7	10	6.8	33	4.0	1.0	.28	.00	.10
26	3.9	1.3	1.8	3.0	7.8	5.6	17	3.2	.70	.27	.00	.09
27	1.5	1.4	1.5	2.7	6.2	35	13	4.2	.45	.22	.00	.08
28	.81	1.8	1.7	2.5	5.6	61	9.9	2.9	.36	.13	.00	.07
29	.76	50	1.8	2.3	---	18	8.4	3.9	.39	.07	.04	.06
30	.75	6.8	1.7	2.3	---	9.4	7.5	4.4	.44	.05	.04	.21
31	.65	---	1.6	2.3	---	8.4	---	3.2	---	.00	.03	---
TOTAL	34.45	94.62	112.5	83.9	287.0	538.6	999.5	253.7	56.34	17.21	3.76	3.64
MEAN	1.11	3.15	3.63	2.71	10.3	17.4	33.3	8.18	1.88	.56	.12	.12
MAX	3.9	50	28	10	25	77	215	51	6.8	1.4	.89	1.1
MIN	.04	.44	1.3	1.4	2.2	4.6	6.7	2.9	.36	.00	.00	.00
CFSM	.15	.41	.48	.36	1.35	2.28	4.32	1.07	.25	.07	.02	.02
IN.	.17	.46	.55	.41	1.40	2.62	4.82	1.24	.27	.08	.02	.02

CAL YR 1982 TOTAL 1806.03 MEAN 4.95 MAX 95 MIN .07 CFSM .65 IN 8.79
WTR YR 1983 TOTAL 2475.12 MEAN 6.78 MAX 215 MIN .00 CFSM .89 IN 12.05

01658500 SOUTH FORK QUANTICO CREEK NEAR INDEPENDENT HILL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1983.

WATER QUALITY DATA, APRIL TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
APR 19...	1010	12	40	--	6.0	--	--	--	--
MAY 24...	0950	6.6	46	--	14.0	--	--	--	--
JUN 28...	1530	.43	63	--	23.0	--	--	--	--
JUL 18...	1235	.11	58	--	23.0	--	--	--	--
SEP 20...	1050	.05	55	--	21.0	--	--	--	--
23...	1130	.45	55	6.3	13.0	17	0	3.6	1.9

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
APR 19...	--	--	--	--	--	--	--	--	--
MAY 24...	--	--	--	--	--	--	--	--	--
JUN 28...	--	--	--	--	--	--	--	--	--
JUL 18...	--	--	--	--	--	--	--	--	--
SEP 20...	--	--	--	--	--	--	--	--	--
23...	4.8	1.8	17	9.6	2.5	13	47	<.10	20

< Actual value is known to be less than the value shown.

DATE	ARSENIC TOTAL (UG/L AS AS)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)
APR 19...	--	--	--	--	--	--	--	--	--
MAY 24...	--	--	--	--	--	--	--	--	--
JUN 28...	--	--	--	--	--	--	--	--	5
JUL 18...	--	--	--	--	--	--	--	--	--
SEP 20...	--	--	--	--	--	--	--	--	--
23...	1	<10	1600	500	<100	100	110	20	--

< Actual value is known to be less than the value shown.

01658550 SOUTH FORK QUANTICO CREEK AT CAMP 5, NEAR JOPLIN, VA

LOCATION.--Lat 38°34'38", long 77°24'36", Prince William County, Hydrologic Unit 02070011, on right bank 200 ft downstream from footbridge in Happyland Camp No. 5 in Prince William Forest Park, 300 ft downstream from Camp 5 Lake, and 1.6 mi northwest of Joplin.

DRAINAGE AREA.--9.62 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to September 1983.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period June to September, 2.44 ft³/s Sept. 13, gage height, 0.94 ft; minimum, 0.18 ft³/s July 17, Aug. 27, gage height, 0.70 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, JUNE TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	2.8	[illegible]	[illegible]
2									---	1.8	[illegible]	[illegible]
3									---	1.7	[illegible]	[illegible]
4									---	1.5	[illegible]	[illegible]
5									---	1.5	[illegible]	[illegible]
6									---	1.5	[illegible]	[illegible]
7									---	1.4	[illegible]	[illegible]
8									---	1.1	[illegible]	[illegible]
9									---	[illegible]	[illegible]	[illegible]
10									---	[illegible]	[illegible]	[illegible]
11									---	.71	[illegible]	[illegible]
12									---	[illegible]	[illegible]	[illegible]
13									---	[illegible]	[illegible]	1.1
14									---	[illegible]	[illegible]	1.4
15									---	[illegible]	[illegible]	[illegible]
16									---	[illegible]	[illegible]	[illegible]
17									---	[illegible]	[illegible]	[illegible]
18									---	[illegible]	[illegible]	[illegible]
19									---	[illegible]	[illegible]	[illegible]
20									---	[illegible]	[illegible]	[illegible]
21									---	[illegible]	[illegible]	[illegible]
22									---	[illegible]	[illegible]	[illegible]
23									---	[illegible]	[illegible]	[illegible]
24									---	[illegible]	[illegible]	[illegible]
25									---	[illegible]	[illegible]	[illegible]
26									---	[illegible]	[illegible]	[illegible]
27									1.8	[illegible]	[illegible]	[illegible]
28									1.9	[illegible]	[illegible]	[illegible]
29									1.8	[illegible]	[illegible]	[illegible]
30									1.9	[illegible]	[illegible]	[illegible]
31									---	[illegible]	[illegible]	---
TOTAL									---	[illegible]	[illegible]	[illegible]
MEAN									---	[illegible]	[illegible]	[illegible]
MAX									---	2.8	[illegible]	[illegible]
MIN									---	[illegible]	[illegible]	[illegible]

01658550 SOUTH FORK QUANTICO CREEK AT CAMP 5, NEAR JOPLIN, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1983.

WATER QUALITY DATA, APRIL TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)
APR 19...	1500	15	26	10.0	--
MAY 24...	1130	13	40	19.0	--
JUN 28...	0930	1.8	50	24.5	4
JUL 18...	0940	.66	54	23.5	--
AUG 22...	1100	.22	50	28.5	--
SEP 20...	1215	.23	52	21.5	--

01658650 SOUTH FORK QUANTICO CREEK NEAR DUMFRIES, VA

LOCATION.--Lat 38°34'18", long 77°20'57", Prince William County, Hydrologic Unit 02070011, on left bank 50 ft downstream from footbridge in Prince William Forest Park, 500 ft upstream from mouth, and 0.7 mi west of Dumfries.

DRAINAGE AREA.--16.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September 1983.

GAGE.--Water-stage recorder.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period May to September, 95 ft³/s May 21, gage height, 3.14 ft; minimum, 0.18 ft³/s Sept. 11-12, gage height, 1.54 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, MAY TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	10	3.3	.50	.46
2								---	9.5	3.8	.46	.43
3								---	9.0	3.9	.44	.38
4								---	15	3.1	.41	.31
5								---	12	3.7	.87	.30
6								---	9.1	3.1	.91	.25
7								---	9.4	2.5	.68	.25
8								---	8.8	2.3	.66	.22
9								---	7.5	2.1	.63	.20
10								---	6.7	2.0	.49	.19
11								---	6.4	1.8	.47	.18
12								---	6.0	1.7	1.0	.20
13								---	5.7	1.5	.80	2.9
14								---	5.3	1.4	.61	3.2
15								---	5.1	1.3	.50	2.3
16								---	4.8	1.2	.44	1.4
17								---	4.5	1.1	.39	1.0
18								20	4.3	1.1	.37	.80
19								17	4.5	1.2	.38	.69
20								17	4.5	1.6	.30	.60
21								34	6.0	3.4	.24	.76
22								47	5.3	1.9	.22	2.7
23								34	4.6	1.3	.22	1.7
24								29	4.1	1.2	.23	1.1
25								20	3.7	1.1	.23	1.1
26								12	3.3	1.0	.22	.90
27								13	3.0	.87	.21	.72
28								11	2.9	.76	.23	.65
29								13	3.0	.69	1.5	.65
30								14	3.3	.63	.85	2.1
31								12	---	.56	.57	---
TOTAL								---	187.3	57.11	16.03	28.64
MEAN								---	6.24	1.84	.52	.95
MAX								---	15	3.9	1.5	3.2
MIN								---	2.9	.56	.21	.18
CFSM								---	.41	.12	.03	.06
IN.								---	.46	.14	.04	.07

01658650 SOUTH FORK QUANTICO CREEK NEAR DUMFRIES, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 1983.

WATER QUALITY DATA, FEBRUARY TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
FEB 15...	1130	90	38	--	7.0	--	--	--	--
MAR 30...	1010	30	46	--	6.0	--	--	--	--
APR 19...	1200	33	41	--	8.5	--	--	--	--
MAY 25...	1250	14	49	--	15.5	--	--	--	--
JUN 29...	1315	3.2	50	--	21.5	--	--	--	--
JUL 19...	1215	1.2	56	--	25.0	--	--	--	--
AUG 24...	1230	.19	70	--	23.0	--	--	--	--
SEP 21...	1120	.49	58	--	21.0	--	--	--	--
23...	1100	1.8	52	7.0	13.5	18	0	4.0	2.0

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
FEB 15...	--	--	--	--	--	--	--	--	--
MAR 30...	--	--	--	--	--	--	--	--	--
APR 19...	--	--	--	--	--	--	--	--	--
MAY 25...	--	--	--	--	--	--	--	--	--
JUN 29...	--	--	--	--	--	--	--	--	--
JUL 19...	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--
SEP 21...	--	--	--	--	--	--	--	--	--
23...	3.3	1.6	22	5.5	2.5	11	43	<.10	10

< Actual value is known to be less than the value shown.

DATE	ARSENIC TOTAL (UG/L AS AS)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)
FEB 15...	--	--	--	--	--	--	--	--	--
MAR 30...	--	--	--	--	--	--	--	--	--
APR 19...	--	--	--	--	--	--	--	--	--
MAY 25...	--	--	--	--	--	--	--	--	--
JUN 29...	--	--	--	--	--	--	--	--	8
JUL 19...	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--
SEP 21...	--	--	--	--	--	--	--	--	--
23...	1	<10	480	300	<100	10	9	20	--

< Actual value is known to be less than the value shown.

01660400 AQUIA CREEK NEAR GARRISONVILLE, VA

LOCATION.--Lat 38°29'25", long 77°26'02", Stafford County, Hydrologic Unit 02070011, on right bank at bridge on State Highway 641, 1.1 mi northwest of Garrisonville, and 3.0 mi upstream from Beaverdam Run.

DRAINAGE AREA.--34.9 mi².

PERIOD OF RECORD.--September 1971 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 120 ft, from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--12 years, 37.7 ft³/s, 14.67 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s June 22, 1972, gage height, 16.32 ft, from rating curve extended above 1,600 ft³/s on basis of contracted-opening measurement of peak flow; no flow Sept. 15-17, 1980, Aug. 24-27, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 21	1100	554	3.56	Apr. 11	0800	502	3.43
Mar. 28	----	Unknown	Unknown	Apr. 15	1830	*1750	6.13
Apr. 10	0830	667	3.84	Apr. 24	1300	804	4.16

No flow Aug. 24-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	5.0	51	13	14	37	47	37	22	6.7	.33	.18
2	2.4	5.0	55	13	30	60	43	35	20	7.0	.33	.12
3	2.0	4.3	31	13	62	38	130	31	19	5.9	.30	.13
4	2.0	11	24	12	34	31	66	30	31	5.9	.23	.15
5	1.2	36	20	12	24	29	50	29	26	6.4	.16	.13
6	1.8	15	18	14	22	27	47	29	20	6.3	.15	.11
7	1.8	8.7	15	13	26	33	49	27	17	5.3	.18	.11
8	1.9	6.7	13	12	31	167	61	26	16	4.1	.17	.14
9	2.0	5.8	12	12	29	135	70	33	14	3.5	.15	.12
10	2.2	4.9	11	25	26	106	413	27	13	3.0	.10	.10
11	2.2	4.5	12	47	25	66	334	26	12	2.4	.14	.08
12	2.3	4.5	13	29	26	47	118	26	11	2.1	.18	.39
13	2.6	16	13	21	26	37	75	26	11	1.5	.19	5.2
14	5.1	16	14	19	27	34	58	26	10	1.3	.17	3.8
15	6.1	11	15	17	28	31	682	27	9.1	1.1	.15	1.2
16	5.2	8.1	104	16	46	28	526	170	8.5	1.3	.20	.34
17	4.3	6.7	64	15	62	26	112	117	7.6	1.1	.18	.27
18	4.0	6.3	33	14	93	92	80	45	7.1	1.1	.14	.22
19	3.8	5.4	25	13	94	212	63	33	49	1.3	.10	.25
20	3.6	5.4	24	13	79	79	53	36	19	2.7	.07	.31
21	3.5	5.8	22	13	70	251	46	84	17	6.5	.05	.66
22	4.3	6.3	19	13	69	106	42	94	14	3.4	.02	.56
23	5.4	5.8	17	26	77	57	41	63	12	2.4	.01	1.6
24	5.1	5.4	16	31	70	44	512	39	9.8	1.7	.00	.98
25	20	4.9	15	24	46	38	163	29	7.9	1.4	.00	.59
26	32	4.9	15	19	38	32	81	30	6.4	.95	.00	.49
27	16	4.9	14	17	31	110	65	36	5.8	.46	.00	.51
28	9.1	6.7	14	16	28	250	52	26	5.4	.41	.32	.37
29	6.4	152	14	15	---	100	44	32	5.2	.49	.23	.33
30	5.2	51	15	15	---	70	40	33	5.6	.46	.22	9.4
31	4.7	---	13	14	---	55	---	27	---	.37	.20	---
TOTAL	171.1	434.0	741	546	1233	2428	4163	1329	431.4	88.54	4.67	28.84
MEAN	5.52	14.5	23.9	17.6	44.0	78.3	139	42.9	14.4	2.86	.15	.96
MAX	32	152	104	47	94	251	682	170	49	7.0	.33	9.4
MIN	1.2	4.3	11	12	14	26	40	26	5.2	.3[illegible]	.00	.08
CFSM	.16	.42	.69	.50	1.26	2.24	3.98	1.23	.41	.08	.004	.03
IN.	.18	.46	.79	.58	1.31	2.59	4.44	1.42	.46	.09	.00	.03

CAL YR 1982 TOTAL 9813.90 MEAN 26.9 MAX 560 MIN .06 CFSM .77 IN 10.46
WTR YR 1983 TOTAL 11598.55 MEAN 31.8 MAX 682 MIN .00 CFSM .91 IN 12.36

01661800 BUSH MILL STREAM NEAR HEATHSVILLE, VA

LOCATION.--Lat 37°52'36", long 76°29'42", Northumberland County, Hydrologic Unit 02080102, on right bank 12 ft upstream from bridge on State Highway 601, 2.2 mi northwest of Howland, 3.0 mi southwest of Heathsville, and 3.5 mi upstream from mouth.

DRAINAGE AREA.--6.82 mi².

PERIOD OF RECORD.--October 1963 to March 1969, October 1969 to current year.

GAGE (CORRECTED).--Water-stage recorder. Datum of gage is 22.22 ft National Geodetic Vertical Datum of 1929. Prior to Mar. 19, 1969, 52 ft downstream at datum 0.82 ft higher.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--19 years (water years 1964-68, 1970-83), 7.39 ft³/s, 14.71 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 714 ft³/s July 30, 1979, gage height, 8.52 ft, from rating curve extended above 130 ft³/s; no flow many days in August and September 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 20, 1969, reached a stage of 6.13 ft, present datum, from floodmarks, discharge, about 450 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 21	1400	108	5.38	Apr. 16	0400	*366	6.88

Minimum discharge, 0.10 ft³/s Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.1	9.0	5.1	4.0	30	12	15	6.8	2.2	.14	2.2
2	1.4	2.2	7.0	4.5	6.8	52	11	14	7.2	2.0	.33	.65
3	1.2	2.4	4.7	4.7	7.9	14	15	13	5.5	1.8	.36	.52
4	1.2	3.2	4.1	4.0	4.8	11	11	21	9.7	1.7	.28	.36
5	1.2	10	3.8	8.1	3.9	9.4	10	13	6.5	1.7	.32	.32
6	1.4	3.9	7.3	13	4.6	9.1	13	12	5.0	1.9	.44	.24
7	1.2	2.8	5.5	6.2	10	10	13	12	4.9	1.5	.48	.19
8	1.2	2.5	3.7	5.0	7.5	12	12	12	9.0	1.4	.44	.16
9	1.2	2.4	3.4	4.6	5.0	10	11	11	5.4	1.2	.36	.14
10	1.2	2.4	3.2	7.8	4.6	10	27	10	4.5	1.1	.32	.16
11	1.3	2.2	5.7	7.6	6.0	8.7	20	9.9	3.8	1.1	.48	.14
12	1.4	2.3	11	5.1	8.2	7.6	13	9.6	3.5	1.1	.91	.13
13	4.0	9.1	6.3	4.3	6.0	6.9	11	9.1	3.3	.91	.69	.20
14	4.6	5.4	4.9	4.2	8.0	6.6	10	9.0	3.0	.91	.60	1.7
15	2.2	18	5.5	6.0	21	6.6	18	8.5	2.8	.78	.44	.73
16	1.7	7.6	34	4.9	16	6.2	172	15	2.6	.69	.36	.40
17	1.4	4.9	15	4.1	18	6.1	53	13	2.4	.65	.32	.32
18	1.4	3.9	8.1	3.7	20	56	35	9.1	2.4	.69	.24	.28
19	1.4	3.7	6.6	3.6	13	39	28	8.4	2.4	.73	.20	.19
20	1.5	3.5	6.8	3.4	9.7	15	23	14	4.7	.91	.20	.17
21	1.7	3.4	5.5	3.5	8.5	62	20	12	11	1.5	.16	1.7
22	1.3	3.2	4.9	4.7	7.8	28	18	14	7.0	.82	.14	8.2
23	1.2	3.2	4.8	13	11	16	18	12	3.5	.65	.14	1.3
24	1.2	3.0	4.6	6.9	9.0	14	73	8.8	2.8	.65	.17	.82
25	16	2.7	4.5	5.0	7.0	13	51	7.3	2.4	.52	.16	.65
26	17	2.7	4.5	4.3	6.3	12	27	7.5	2.1	.69	.14	.60
27	4.2	3.0	4.2	4.1	5.7	20	21	9.3	2.0	.48	.16	.48
28	2.7	3.2	4.1	4.0	5.7	40	19	6.6	2.0	.36	.20	.44
29	2.2	7.9	7.8	3.8	---	16	17	6.6	2.6	.24	.28	.44
30	2.1	4.7	7.0	4.0	---	13	16	6.8	2.6	.19	.48	14
31	2.0	---	6.1	5.1	---	13	---	6.2	---	.17	2.5	---
TOTAL	85.3	131.5	213.6	168.3	246.0	573.2	798	335.7	133.4	31.24	12.44	37.83
MEAN	2.75	4.38	6.89	5.43	8.79	18.5	26.6	10.8	4.45	1.01	.40	1.26
MAX	17	18	34	13	21	62	172	21	11	2.2	2.5	14
MIN	1.2	2.1	3.2	3.4	3.9	6.1	10	6.2	2.0	.17	.14	.13
CFSM	.40	.64	1.01	.80	1.29	2.71	3.90	1.58	.65	.15	.06	.19
IN.	.47	.72	1.16	.92	1.34	3.13	4.35	1.83	.73	.17	.07	.21

CAL YR 1982 TOTAL 1889.02 MEAN 5.18 MAX 38 MIN .29 CFSM .76 IN 10.30
WTR YR 1983 TOTAL 2766.51 MEAN 7.58 MAX 172 MIN .13 CFSM 1.11 IN 15.09

01662000 RAPPAHANNOCK RIVER NEAR WARRENTON, VA

LOCATION.--Lat 38°41'05", long 77°54'15", Fauquier County, Hydrologic Unit 02080103, on left bank 50 ft downstream from westbound bridge on U.S. Highway 211, 0.9 mi downstream from Carter Run, 6.2 mi southwest of Warrenton, 15 mi upstream from Hazel River, and at mile 53.0.

DRAINAGE AREA.--195 mi^2.

PERIOD OF RECORD.--August 1942 to current year.

REVISED RECORDS.--WSP 1302: 1944(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 312.57 ft National Geodetic Vertical Datum of 1929. Oct. 8, 1942, to Dec. 17, 1944, nonrecording gage 50 ft upstream at present datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--41 years, 195 ft^3/s, 13.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft^3/s Oct. 15, 1942, gage height, 23.5 ft, from floodmark, from rating curve extended above 24,000 ft^3/s; minimum daily, 0.70 ft^3/s Oct. 4, 5, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0930	2150	8.12	Apr. 15	2230	4990	13.50
Apr. 3	0700	2740	9.38	Apr. 24	1800	4420	12.55
Apr. 10	1230	*5940	15.01	May 16	2130	2550	8.97

Minimum discharge, 3.1 ft^3/s Sept. 10, gage height, 1.34 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	26	152	68	83	286	317	469	216	99	12	5.0
2	20	25	184	67	180	290	293	429	220	94	13	4.5
3	18	24	138	66	631	251	1560	395	194	85	14	4.6
4	17	150	119	62	350	226	801	368	241	74	12	4.7
5	18	321	104	60	250	212	616	325	202	85	43	4.8
6	18	118	94	62	218	203	533	294	171	99	37	4.3
7	19	79	83	62	210	277	525	275	423	73	24	3.9
8	22	63	72	60	202	403	545	269	231	60	18	4.0
9	20	56	67	57	175	627	550	298	172	55	15	3.6
10	23	51	63	102	162	484	3980	243	159	52	16	3.4
11	26	47	65	280	164	399	1870	226	149	47	16	3.7
12	24	45	77	183	274	333	1050	214	138	44	39	3.4
13	26	57	71	139	401	288	800	203	129	42	28	21
14	40	60	72	122	347	258	677	198	121	38	21	66
15	38	50	74	113	290	240	2090	233	114	34	17	24
16	26	45	463	102	341	216	2300	1110	110	32	14	13
17	22	43	388	89	325	202	1060	1160	105	30	13	10
18	21	43	222	86	369	552	835	578	103	28	12	8.4
19	20	42	171	78	483	1760	693	448	114	29	14	7.1
20	19	44	151	88	503	959	598	436	110	32	13	6.4
21	20	46	132	81	507	742	522	481	163	69	11	6.7
22	21	46	114	83	577	588	462	668	167	43	8.5	11
23	21	45	103	113	688	460	426	608	121	31	6.9	14
24	20	43	97	172	671	388	2660	451	100	27	6.7	11
25	48	40	92	129	523	343	1870	369	91	25	8.1	9.0
26	149	39	90	112	422	303	1030	323	81	24	8.5	7.5
27	76	38	86	104	340	394	796	305	74	22	7.3	6.9
28	46	44	83	97	302	701	674	263	73	19	6.4	6.7
29	35	286	82	91	---	450	586	275	145	16	6.1	6.4
30	30	195	75	90	---	369	522	273	120	15	5.7	9.7
31	28	---	69	89	---	337	---	237	---	13	4.7	---
TOTAL	953	2211	3853	3107	9988	13541	31241	12424	4557	1436	470.9	294.7
MEAN	30.7	73.7	124	100	357	437	1041	401	152	46.3	15.2	9.82
MAX	149	321	463	280	688	1760	3980	1160	423	99	43	66
MIN	17	24	63	57	83	202	293	198	73	13	4.7	3.4
CFSM	.16	.38	.64	.51	1.83	2.24	5.34	2.06	.78	.24	.08	.05
IN.	.18	.42	.74	.59	1.91	2.58	5.96	2.37	.87	.27	.09	.06

CAL YR 1982 TOTAL 59103.9 MEAN 162 MAX 1260 MIN 9.9 CFSM .83 IN 11.28
WTR YR 1983 TOTAL 84076.6 MEAN 230 MAX 3980 MIN 3.4 CFSM 1.18 IN 16.04

01662800 BATTLE RUN NEAR LAUREL MILLS, VA

LOCATION.--Lat 38°39'20", long 78°04'27", Rappahannock County, Hydrologic Unit 02080103, on left bank just upstream from bridge on State Highway 729, 0.8 mi upstream from mouth, and 1.0 mi northeast of Laurel Mills.

DRAINAGE AREA.--27.6 mi².

PERIOD OF RECORD.--April 1958 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-72-1: 1971. WDR VA-74-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 374.62 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--25 years, 26.3 ft³/s, 12.94 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,120 ft³/s Oct. 9, 1976, gage height, 13.90 ft, from floodmark, from rating curve extended above 2,500 ft³/s on basis of velocity-area study; no flow many days in September 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 310 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0300	559	5.83	Apr. 15	1430	1430	8.39
Apr. 3	0100	*1830	9.18	Apr. 24	1000	1040	7.40
Apr. 10	0700	1380	8.30	May 16	1430	410	5.24

Minimum discharge, 0.08 ft³/s Sept. 11-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	5.5	21	10	12	39	42	55	29	14	3.3	.59
2	3.9	5.5	21	10	45	37	120	53	27	13	3.9	.60
3	3.5	5.7	17	10	56	33	423	49	29	12	3.2	.54
4	3.6	18	15	9.3	38	31	120	45	40	11	3.8	.45
5	3.6	15	13	9.6	30	30	87	40	28	18	15	.46
6	4.8	8.1	12	10	28	31	75	37	25	15	4.5	.39
7	4.5	6.9	11	9.8	28	36	71	35	27	13	3.4	.38
8	4.1	6.4	10	9.3	27	51	70	37	23	9.9	2.9	.82
9	4.6	5.6	9.7	9.2	25	58	94	34	21	9.3	3.0	.42
10	5.2	5.4	9.1	24	23	49	613	31	22	9.0	4.0	.20
11	4.5	5.2	10	29	13	43	201	30	20	8.3	4.3	.16
12	4.5	5.4	11	21	19	38	122	28	19	8.0	6.3	.12
13	6.8	7.4	9.8	18	26	35	94	27	17	7.5	3.6	8.1
14	8.6	5.9	9.8	17	27	33	79	28	17	6.8	2.7	4.6
15	5.5	5.6	9.8	16	31	32	427	30	16	6.9	2.4	1.3
16	4.8	5.3	67	15	41	29	218	170	16	6.1	2.2	.89
17	4.3	5.3	36	14	43	28	134	81	15	5.5	2.0	.83
18	4.5	5.4	26	14	66	227	103	56	18	5.2	2.3	.78
19	5.0	5.4	21	11	83	332	85	48	18	5.3	2.1	.66
20	5.2	6.0	19	10	77	131	72	44	26	5.3	1.5	.63
21	5.5	5.8	17	11	76	99	63	68	27	5.5	1.1	1.3
22	5.0	5.7	15	12	81	71	57	66	20	6.7	.87	2.3
23	4.9	5.8	14	21	91	57	58	58	17	5.4	.93	1.5
24	4.8	5.5	13	19	80	50	448	47	15	5.8	1.6	1.2
25	14	4.9	13	16	64	45	191	40	14	5.0	1.5	1.2
26	11	5.0	13	15	53	39	119	39	14	4.9	1.2	1.2
27	7.1	5.0	12	15	45	73	94	36	12	4.4	.94	1.4
28	6.0	8.9	12	14	41	71	78	32	13	4.0	.85	1.3
29	5.7	35	12	13	---	55	67	36	15	3.5	.85	1.1
30	5.5	18	11	14	---	48	60	34	15	3.3	.68	3.4
31	5.5	---	11	13	---	47	---	30	---	3.2	.64	---
TOTAL	170.8	238.6	501.2	439.2	1269	1978	4485	1444	615	240.8	87.56	38.82
MEAN	5.51	7.95	16.2	14.2	45.3	63.8	150	46.6	20.5	7.77	2.82	1.29
MAX	14	35	67	29	91	332	613	170	40	18	15	8.1
MIN	3.5	4.9	9.1	9.2	12	28	42	27	12	3.2	.64	.12
CFSM	.20	.29	.59	.51	1.64	2.31	5.44	1.69	.74	.28	.10	.05
IN.	.23	.32	.68	.59	1.71	2.67	6.04	1.95	.83	.32	.12	.05

CAL YR 1982 TOTAL 7452.80 MEAN 20.4 MAX 270 MIN 2.2 CFSM .74 IN 10.04
WTR YR 1983 TOTAL 11507.98 MEAN 31.5 MAX 613 MIN .12 CFSM 1.14 IN 15.51

01663500 HAZEL RIVER AT RIXEYVILLE, VA

LOCATION.--Lat 38°35'30", long 77°57'55", Culpeper County, Hydrologic Unit 02080103, on right bank at downstream side of bridge on State Highway 229, 0.4 mi upstream from Waterford Run, 1.1 mi northeast of Rixeyville, 2.8 mi downstream from Thornton River, and 9.1 mi upstream from mouth.

DRAINAGE AREA.--287 mi².

PERIOD OF RECORD.--August 1942 to current year.

REVISED RECORDS.--WSP 971: 1942. WSP 1622: 1957-58. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 288.30 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--41 years, 340 ft³/s, 16.09 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,000 ft³/s Oct. 15, 1942, gage height, 31.8 ft, from rating curve extended above 27,000 ft³/s; minimum, 1.1 ft³/s Sept. 10-13, 1966, gage height, 1.69 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 26, 1937, reached a stage of 28.4 ft, from floodmarks, discharge, 43,500 ft³/s, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0800	5210	13.30	Apr. 15	2130	9700	16.99
Apr. 3	0730	8940	16.53	Apr. 24	1700	10200	17.31
Apr. 10	1300	*11600	18.03	May 16	2100	3510	10.88

Minimum discharge, 4.6 ft³/s Sept. 12, gage height, 1.69 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	69	293	145	163	458	514	690	341	215	36	15
2	53	66	379	142	282	456	481	635	322	268	34	15
3	48	65	282	140	1450	414	4870	592	298	197	37	14
4	46	118	243	133	827	393	1760	550	417	179	36	13
5	46	356	215	130	601	383	1190	501	348	194	79	12
6	46	178	198	133	501	379	958	465	298	239	69	11
7	48	132	179	130	452	506	864	435	284	166	60	10
8	46	115	161	127	410	552	808	422	263	143	53	8.4
9	46	105	152	123	360	783	788	420	235	131	42	7.1
10	53	97	143	192	333	660	6860	379	227	124	57	6.5
11	56	92	144	488	250	588	2570	362	220	114	67	5.7
12	56	89	158	338	282	516	1550	346	204	108	108	5.1
13	63	96	148	271	428	456	1160	316	195	103	86	18
14	97	96	137	241	388	416	953	309	186	96	57	132
15	88	85	157	225	362	390	3590	340	175	89	48	54
16	68	80	718	205	410	355	3400	1400	171	85	42	31
17	59	78	640	181	448	331	1600	1420	164	77	38	23
18	55	77	427	179	581	1250	1220	770	174	75	37	20
19	54	75	344	133	716	3950	999	610	220	73	38	18
20	54	80	301	167	735	1840	841	578	210	70	35	16
21	55	102	264	177	713	1330	731	645	505	71	30	20
22	55	98	232	166	788	992	648	827	818	70	25	42
23	55	94	213	223	937	780	601	832	395	65	22	32
24	53	91	202	282	958	663	5850	610	297	63	23	23
25	77	84	193	231	777	582	3070	518	250	64	29	21
26	199	81	186	207	653	502	175C	473	212	58	36	20
27	137	80	176	195	546	591	1290	487	191	55	29	20
28	98	87	170	187	488	1050	1040	412	178	50	24	19
29	84	462	167	176	---	696	878	419	200	45	20	18
30	77	361	156	174	---	589	769	421	264	41	19	25
31	73	---	148	171	---	548	---	373	---	39	18	---
TOTAL	2101	3689	7526	6012	15839	23399	53603	17557	8262	3367	1334	674.8
MEAN	67.8	123	243	194	566	755	1787	566	275	109	43.0	22.5
MAX	199	462	718	488	1450	3950	6860	1420	818	268	108	132
MIN	46	65	137	123	163	331	481	309	164	39	18	5.1
CFSM	.24	.43	.85	.68	1.97	2.63	6.23	1.97	.96	.38	.15	.08
IN.	.27	.48	.98	.78	2.05	3.03	6.95	2.28	1.07	.44	.17	.09

CAL YR 1982 TOTAL 105088.0 MEAN 288 MAX 2320 MIN 28 CFSM 1.00 IN 13.62
WTR YR 1983 TOTAL 143363.8 MEAN 393 MAX 6860 MIN 5.1 CFSM 1.37 IN 18.58

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA

LOCATION.--Lat 38°31'50", long 77°48'50", Fauquier County, Hydrologic Unit 02080103, on left bank 80 ft upstream from bridge on alternate U.S. Highway 29, at Remington, 0.3 mi upstream from Tinpot Run, 0.4 mi downstream from Ruffans Run, 2.5 mi downstream from Hazel River, and at mile 35.2.

DRAINAGE AREA.--620 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1942 to current year.

REVISED RECORDS.--WSP 1171: 1944. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252.53 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1951, nonrecording gage at bridge 80 ft downstream at same datum.

REMARKS.--Records good. Gage-height telemeter at station.

AVERAGE DISCHARGE.--41 years, 677 ft³/s, 14.83 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,000 ft³/s Oct. 16, 1942, gage height, 30.0 ft, from floodmarks, from rating curve extended above 43,000 ft³/s on basis of slope-area determination of peak flow; minimum, 2.8 ft³/s Sept. 13, 1966, gage height, 2.31 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1828, that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	1545	8110	13.03	Apr. 16	0830	14400	16.28
Apr. 3	1645	9660	14.16	Apr. 25	0300	14300	16.26
Apr. 10	2215	*17700	17.39	May 17	0145	7160	12.26

Minimum discharge, 8.8 ft³/s Sept. 11, 12, gage height, 2.55 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	125	631	263	306	906	1110	1460	715	407	48	23
2	98	119	832	259	456	914	1000	1320	698	431	47	20
3	89	116	612	250	2350	818	6430	1220	634	401	47	20
4	81	442	502	238	1450	749	3440	1150	808	332	49	20
5	81	1260	427	230	1030	712	2230	1040	745	348	53	17
6	82	508	381	238	850	684	1810	957	611	525	147	16
7	80	316	343	240	795	888	1710	884	750	337	95	15
8	80	255	306	232	753	1340	1710	847	684	263	84	13
9	81	224	280	223	657	1900	1840	896	538	231	62	11
10	85	205	263	292	598	1470	11100	778	498	215	54	12
11	94	190	259	887	525	1250	10700	716	482	197	90	10
12	97	183	288	716	633	1060	4020	676	454	182	110	10
13	102	196	271	532	1210	918	2800	638	429	170	161	33
14	140	204	254	455	1020	827	2240	618	409	159	97	180
15	171	184	315	420	776	772	4830	658	392	141	73	152
16	135	167	1350	389	838	698	11100	2170	380	134	64	70
17	106	158	1650	338	924	644	3960	4460	364	122	54	46
18	94	156	929	336	1220	1450	2880	1800	349	120	51	37
19	89	154	700	265	1580	6950	2300	1340	446	112	52	32
20	90	156	606	305	1610	3900	1910	1250	400	112	52	31
21	90	176	530	335	1580	2700	1640	1430	813	127	49	32
22	91	187	453	315	1720	2080	1430	2100	1220	144	41	79
23	91	178	411	415	2030	1570	1300	1950	724	115	34	68
24	89	168	381	621	2120	1330	7510	1390	538	103	32	53
25	118	158	362	478	1600	1180	9960	1150	449	100	33	44
26	383	148	343	408	1340	1050	3950	1020	384	93	42	38
27	342	144	324	375	1110	1250	2820	1040	342	85	44	36
28	208	151	310	355	973	2810	2270	879	318	77	36	35
29	164	953	306	334	---	1600	1890	852	356	67	30	33
30	143	896	288	324	---	1290	1640	901	503	60	26	43
31	133	---	271	321	---	1170	---	793	---	54	26	---
TOTAL	3835	8477	15178	11389	32054	46880	113530	38383	16433	5964	1883	1229
MEAN	124	283	490	367	1145	1512	3784	1238	548	192	60.7	41.0
MAX	383	1260	1650	887	2350	6950	11100	4460	1220	525	161	180
MIN	80	116	254	223	306	644	1000	618	318	54	26	10
CFSM	.20	.46	.79	.59	1.85	2.44	6.10	2.00	.88	.31	.10	.07
IN.	.23	.51	.91	.68	1.92	2.81	6.81	2.30	.99	.36	.11	.07

CAL YR 1982 TOTAL 219729 MEAN 602 MAX 5360 MIN 52 CFSM .97 IN 13.18
WTR YR 1983 TOTAL 295235 MEAN 809 MAX 11100 MIN 10 CFSM 1.31 IN 17.71

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1951 to September 1956, October 1965 to current year.
WATER TEMPERATURES: May 1951 to September 1956, October 1965 to September 1976, October 1977 to current year.
SUSPENDED-SEDIMENT DISCHARGE: April 1951 to current year.

REMARKS.--Daily sediment records based on fragmentary concentration and transport curves due to unreliable observer sampling.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 150 micromhos Sept. 3, 1974; minimum daily, 24 micromhos July 6, 1975.
WATER TEMPERATURES: Maximum, 32.5°C July 19, 1980, July 18, 21, 1981; minimum, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,870 mg/L June 13, 1982; minimum daily mean, 1 mg/L on many days during each year.
SEDIMENT LOADS: Maximum daily, 55,600 tons Sept. 26, 1975; minimum daily, 0.03 ton Sept. 9, 11, 1983.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 122 micromhos Apr. 7; minimum daily, 48 micromhos Apr. 10.
WATER TEMPERATURES: Maximum daily, 28.0°C on several days in July and September; minimum observed, 2.0°C Feb. 12, 13.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 460 mg/L Apr. 25; minimum daily mean, 1 mg/L many days July to September.
SEDIMENT LOADS: Maximum daily, 12,400 tons Apr. 25; minimum daily, 0.03 ton Sept. 9, 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT												
20...	1100	92	62	7.4	17.0	16	--	27	0	7.1	2.3	4.0
DEC												
07...	1430	338	60	7.0	12.5	17	--	25	3	6.4	2.2	3.8
JAN												
19...	0900	267	72	6.9	3.5	10	--	22	4	5.4	2.0	3.5
MAR												
16...	0900	707	69	7.0	10.5	10	--	21	5	5.3	1.9	3.1
MAY												
24...	1440	1340	90	7.5	16.0	6	--	22	5	5.8	1.9	2.7
JUL												
11...	0900	196	68	7.2	28.0	17	--	24	2	6.5	1.9	3.9
AUG												
22...	1510	39	78	7.8	23.5	5	8.8	28	1	7.6	2.2	4.6

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)
OCT												
20...	2.1	28	5.0	4.9	<.10	11	51	53	<.010	.10	.010	180
DEC												
07...	1.1	22	7.0	4.4	<.10	12	53	50	<.010	.42	<.010	200
JAN												
19...	1.2	18	5.0	3.8	<.10	13	48	45	<.010	.64	<.010	150
MAR												
16...	.9	16	8.7	3.7	<.10	12	48	45	<.010	.63	<.010	120
MAY												
24...	1.1	17	9.6	2.6	<.10	13	66	47	.010	.54	--	110
JUL												
11...	1.6	22	5.3	3.8	.10	13	62	49	<.010	.45	<.010	130
AUG												
22...	2.3	27	6.6	4.4	<.10	7.8	53	52	.030	.16	<.010	87

< Actual value is known to be less than the value shown.

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	54	55	60	60	74	82	90	85	74	80	78
2	69	54	60	60	61	70	90	85	85	68	70	78
3	62	55	60	60	67	69	90	80	85	79	80	75
4	69	54	55	63	59	63	95	92	80	70	70	75
5	68	73	55	60	60	70	95	85	85	74	80	75
6	68	72	95	63	60	64	101	90	82	66	80	75
7	69	64	60	63	63	64	122	92	85	68	72	75
8	67	67	50	56	63	70	82	100	90	68	68	75
9	68	69	58	60	63	66	75	99	70	66	70	75
10	70	69	58	62	63	70	48	90	80	68	70	65
11	68	73	55	56	60	70	70	90	80	68	70	60
12	71	70	55	67	60	70	80	90	85	68	70	60
13	68	74	55	65	61	69	95	90	80	68	68	63
14	68	70	50	66	60	68	85	89	85	68	65	61
15	66	72	73	64	62	68	57	95	70	66	68	61
16	65	72	65	75	62	69	81	95	70	66	68	68
17	70	73	60	70	65	68	91	92	80	80	68	68
18	69	73	55	71	69	65	85	95	75	65	68	68
19	70	74	53	72	71	56	82	90	75	66	75	68
20	62	73	55	74	70	54	82	90	75	65	78	68
21	64	74	55	79	69	74	90	85	75	65	78	68
22	64	73	55	69	70	79	85	90	75	65	78	69
23	64	74	55	74	70	79	118	90	75	75	78	68
24	65	74	50	65	70	79	89	90	78	75	78	68
25	64	85	50	61	71	78	90	90	76	75	78	68
26	65	76	50	67	71	80	95	89	75	70	78	68
27	64	66	55	71	70	80	81	90	75	72	78	68
28	65	69	60	64	69	75	90	80	75	70	75	68
29	64	60	50	63	---	76	89	85	75	70	78	68
30	63	80	70	64	---	79	89	85	75	72	78	68
31	65	---	63	60	---	84	---	85	---	70	78	---
MEAN	67	70	58	65	65	71	87	90	79	70	74	69

WTR YR 1983 MEAN 72 MAX 122 MIN 48

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	11.5	13.5	9.0	6.0	7.0	8.0	19.5	21.5	26.0	22.5	28.0
2	17.0	14.5	13.5	7.0	5.0	9.0	9.0	20.5	22.5	27.0	24.5	27.0
3	17.0	11.5	12.5	7.0	5.0	10.5	9.0	21.5	21.5	27.0	23.5	28.0
4	16.0	12.5	12.5	9.0	6.0	12.5	10.5	19.5	19.0	28.0	23.5	27.0
5	15.0	11.5	10.5	8.0	5.0	11.5	9.5	20.5	18.0	28.0	21.5	28.0
6	15.0	13.5	11.5	7.0	6.0	8.0	10.5	19.5	20.5	26.0	22.5	28.0
7	16.0	14.5	12.5	9.0	5.0	8.0	11.5	10.5	23.5	25.0	21.5	28.0
8	17.0	15.0	11.5	8.0	4.0	9.0	12.5	17.0	20.5	27.0	23.5	22.0
9	16.0	16.0	7.0	8.0	4.0	10.5	11.5	18.0	22.5	27.0	23.5	21.0
10	15.0	11.5	8.0	7.0	3.0	9.0	12.5	16.0	23.5	27.0	22.5	20.0
11	11.0	12.5	8.0	9.0	3.0	10.5	11.5	16.0	24.5	28.0	23.5	25.0
12	10.5	17.5	8.0	6.0	2.0	11.5	12.5	17.0	22.5	28.0	22.5	18.0
13	12.5	16.5	7.0	7.0	2.0	10.5	11.5	15.0	22.5	25.0	23.5	18.0
14	13.5	15.5	5.0	6.0	3.0	11.5	12.5	18.0	23.5	24.0	24.5	17.0
15	10.5	11.5	4.0	2.5	4.0	9.0	11.5	17.0	24.5	22.5	24.5	17.0
16	12.5	10.5	5.0	3.5	3.0	10.5	10.5	16.0	25.0	27.0	24.5	16.0
17	11.5	15.5	4.0	5.0	4.0	8.0	11.5	15.0	25.0	25.0	22.5	17.0
18	11.5	14.5	5.0	4.5	5.0	9.0	10.5	17.0	27.0	25.0	23.5	16.0
19	12.5	11.5	5.0	3.5	6.0	10.5	12.5	16.0	26.0	26.0	21.5	15.0
20	13.5	12.5	4.5	6.5	5.0	9.0	11.5	17.0	25.0	27.0	22.5	17.0
21	14.5	11.5	3.5	2.5	4.0	8.0	12.5	15.0	24.5	28.0	24.5	17.0
22	17.5	12.5	4.5	3.5	6.0	9.0	9.0	18.0	24.5	23.5	23.5	16.0
23	18.0	18.5	4.5	2.5	7.0	7.0	8.0	15.0	23.5	24.5	26.0	16.0
24	17.0	17.5	9.5	2.5	6.0	8.0	7.0	16.0	24.5	23.5	27.0	15.0
25	13.5	15.5	10.5	3.5	7.0	9.0	8.0	17.0	22.5	22.5	26.0	16.0
26	15.5	12.5	11.5	3.5	7.0	9.0	9.0	17.0	23.0	23.5	26.0	20.0
27	16.5	11.5	10.5	4.5	6.0	8.0	10.0	18.0	25.0	22.5	27.0	25.0
28	12.5	14.5	9.5	5.0	8.0	7.0	17.0	19.0	26.0	24.5	26.0	21.0
29	11.5	15.5	6.5	6.0	---	6.0	19.0	17.0	26.0	22.5	27.0	24.0
30	14.5	18.5	8.5	7.0	---	7.0	20.5	16.0	25.0	21.5	25.0	20.0
31	13.0	---	7.5	5.0	---	8.0	---	---	---	23.5	26.0	---
MEAN	14.5	14.0	8.0	5.5	5.0	9.0	11.5	17.0	23.5	25.5	24.0	21.0

WTR YR 1983 MEAN 15.0 MAX 28.0 MIN 2.0

01664000 RAPPAHANNOCK RIVER AT REMINGTON, VA--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN-TRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	3	.87	10	3.4	30	51	10	7.1	7	5.8	12	29
2	3	.79	10	3.2	45	101	10	7.0	42	78	12	30
3	2	.48	10	3.1	32	53	10	6.8	439	2910	10	22
4	2	.44	45	54	27	37	9	5.8	80	313	10	20
5	2	.44	85	289	25	29	10	6.2	38	106	8	15
6	2	.44	39	53	15	15	12	7.7	30	69	8	15
7	2	.43	21	18	8	7.4	10	6.5	23	49	13	31
8	2	.43	20	14	8	6.6	9	5.6	15	30	28	101
9	3	.66	15	9.1	8	6.0	8	4.8	12	21	33	169
10	5	1.1	14	7.7	8	5.7	15	12	12	19	20	79
11	7	1.8	12	6.2	12	8.4	26	62	7	9.9	19	64
12	9	2.4	13	6.4	10	7.8	19	37	15	26	17	49
13	15	4.1	15	7.9	8	5.9	15	22	17	56	15	37
14	21	7.9	15	8.3	5	3.4	12	15	15	41	12	27
15	20	9.2	10	5.0	12	10	11	12	13	27	12	25
16	15	5.5	10	4.5	140	510	10	11	15	34	10	19
17	12	3.4	9	3.8	92	410	10	9.1	17	42	10	17
18	12	3.0	10	4.2	30	75	11	10	26	86	56	219
19	10	2.4	8	3.3	27	51	8	5.7	34	145	300	5630
20	9	2.2	8	3.4	25	41	8	6.6	30	130	88	927
21	8	1.9	10	4.8	20	29	10	9.0	30	128	50	364
22	8	2.0	12	6.1	20	24	8	6.8	36	167	32	180
23	7	1.7	10	4.8	18	20	10	11	45	247	30	127
24	7	1.7	10	4.5	15	15	17	29	40	229	25	90
25	13	4.1	8	3.4	15	15	15	19	29	125	22	70
26	24	25	5	2.0	12	11	13	14	20	72	20	57
27	20	18	5	1.9	12	10	12	12	17	51	34	115
28	16	9.0	7	2.9	12	10	10	9.6	14	37	50	379
29	12	5.3	80	206	12	9.9	8	7.2	---	---	30	130
30	12	4.6	49	119	11	8.6	8	7.0	---	---	24	84
31	11	4.0	---	---	11	8.0	7	6.1	---	---	24	76
TOTAL	---	125.28	---	862.9	---	1594.7	---	390.6	---	5253.7	---	9197
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	22	66	30	118	14	27	10	11	1	.13	1	.06
2	20	54	28	100	15	28	15	17	1	.13	1	.05
3	270	4690	24	79	12	21	11	12	1	.13	1	.05
4	69	641	20	62	20	44	8	7.2	1	.13	1	.05
5	39	235	18	51	15	30	10	9.4	3	.43	1	.05
6	35	171	18	47	12	20	12	17	10	4.0	2	.09
7	37	171	15	36	16	32	8	7.3	7	1.8	1	.04
8	35	162	15	34	15	28	6	4.3	4	.91	1	.04
9	40	199	19	46	10	15	5	3.1	3	.50	1	.03
10	311	11700	16	34	10	13	5	2.9	2	.29	2	.06
11	250	7220	15	29	10	13	5	2.7	7	1.7	1	.03
12	80	868	15	27	9	11	4	2.0	10	3.0	2	.05
13	58	438	13	22	9	10	3	1.4	14	6.1	6	.53
14	48	290	12	20	9	9.9	3	1.3	6	1.6	12	5.8
15	250	3260	15	27	8	8.5	3	1.1	4	.79	9	3.7
16	300	8990	195	1640	8	8.2	3	1.1	3	.52	3	.57
17	72	770	190	2290	8	7.9	3	.99	3	.44	2	.25
18	60	467	50	243	7	6.6	3	.97	2	.28	2	.20
19	55	342	37	134	10	12	2	.60	2	.28	2	.17
20	40	206	30	101	10	11	2	.60	2	.28	1	.08
21	30	133	42	162	26	57	3	1.0	2	.26	3	.26
22	30	116	47	266	50	165	4	1.6	2	.22	5	1.1
23	26	91	40	211	20	39	3	.93	1	.09	3	.55
24	374	11000	30	113	10	15	2	.56	3	.26	2	.29
25	460	12400	28	87	9	11	2	.54	5	.45	1	.12
26	85	907	25	69	7	7.3	2	.50	6	.68	1	.10
27	60	457	25	70	7	6.5	2	.46	5	.59	1	.10
28	48	294	20	47	6	5.2	2	.42	3	.29	1	.09
29	42	214	17	39	5	4.8	2	.36	2	.16	1	.09
30	35	155	20	49	13	18	1	.16	1	.07	2	.23
31	---	---	14	30	---	---	1	.15	1	.07	---	---
TOTAL	---	66707	---	6283	---	684.9	---	110.64	---	26.58	---	14.83

TOTAL LOAD FOR YEAR: 91251.13 TONS.

01665000 MOUNTAIN RUN NEAR CULPEPER, VA

LOCATION.--Lat 38°28'50", long 78°03'10", Culpeper County, Hydrologic Unit 02080103, on left bank 30 ft upstream from bridge on State Highway 641, 2.4 mi upstream from Bond Branch, and 3.0 mi west of Culpeper.

DRAINAGE AREA.--15.9 mi², of which 10.9 mi² are above flood-detention structures.

PERIOD OF RECORD.--September 1949 to current year.

REVISED RECORDS.--WSP 1332: 1950-51. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 389.46 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation since 1959 by two reservoirs, combined flood storage, 2,240 acre-ft; 531 acre-ft additional storage used for low-water regulation for municipal supply for town of Culpeper. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--34 years, 16.6 ft³/s, 14.18 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,440 ft³/s Aug. 18, 1955, from rating curve extended above 910 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 11.20 ft Dec. 4, 1950; minimum discharge, 0.09 ft³/s Sept. 30, Oct. 1, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 10	0630	*645	6.50	Apr. 15	1530	504	5.82
Apr. 10	2230	310	4.67	Apr. 24	0930	520	5.90
Apr. 11	0430	333	4.82				

Minimum discharge, 0.35 ft³/s Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	8.4	33	9.0	14	23	31	31	15	9.4	2.9	.64
2	4.4	8.7	32	11	26	23	31	28	15	13	2.6	.72
3	4.2	9.0	24	9.0	38	21	131	28	14	8.2	2.3	.72
4	4.1	24	21	8.7	24	20	79	28	20	7.0	1.4	.88
5	4.0	24	18	8.4	19	19	45	26	16	6.8	1.7	.88
6	4.4	15	16	9.0	18	20	39	25	14	7.0	2.4	.48
7	4.2	10	15	9.0	19	26	39	24	13	5.8	2.2	.56
8	4.1	8.4	14	9.0	18	36	42	24	12	5.4	2.4	.56
9	4.3	7.3	13	9.0	17	46	50	26	11	4.9	2.7	1.1
10	4.6	7.3	12	15	16	32	260	24	11	4.5	2.6	1.6
11	4.2	7.0	13	22	17	27	225	22	10	4.1	1.9	.96
12	4.1	7.3	16	18	21	23	142	22	10	3.9	2.7	1.8
13	4.7	9.7	16	16	19	21	84	20	9.7	3.6	2.3	3.8
14	6.7	10	14	14	18	20	73	19	9.0	3.4	2.0	1.9
15	4.5	10	15	14	18	20	190	19	9.0	3.4	1.9	1.3
16	3.5	9.7	66	13	21	19	200	80	9.4	3.4	1.9	1.2
17	3.2	9.7	44	11	25	18	111	70	9.0	3.4	2.4	1.3
18	3.3	10	28	11	32	90	85	39	9.0	3.6	2.9	1.2
19	3.6	11	23	11	39	180	58	32	12	3.4	2.9	1.0
20	3.9	12	19	10	39	93	43	30	31	3.6	2.6	1.1
21	3.6	12	16	9.4	40	64	37	56	35	3.2	1.8	2.4
22	3.6	12	13	9.7	47	45	35	65	16	3.2	1.1	3.4
23	3.2	12	12	15	51	37	37	49	12	3.2	1.6	2.3
24	3.4	12	12	17	46	32	275	33	9.4	3.4	1.2	2.0
25	8.5	12	11	14	36	26	192	20	8.2	3.4	1.2	2.0
26	11	12	11	13	29	24	115	20	7.6	3.4	1.4	1.9
27	9.4	12	11	12	25	43	77	21	7.0	3.2	.96	1.9
28	7.9	16	11	12	23	70	51	18	7.0	3.1	.96	1.9
29	7.9	62	11	12	---	46	36	18	8.7	3.1	.64	1.4
30	8.4	35	9.7	12	---	37	33	18	9.4	2.9	.88	4.0
31	8.4	---	9.4	18	---	33	---	16	---	2.9	.88	---
TOTAL	160.1	415.5	579.1	381.2	755	1234	2846	951	379.4	142.8	59.32	46.90
MEAN	5.16	13.9	18.7	12.3	27.0	39.8	94.9	30.7	12.6	4.61	1.91	1.56
MAX	11	62	66	22	51	180	275	80	35	13	2.9	4.0
MIN	3.2	7.0	9.4	8.4	14	18	31	16	7.0	2.9	.64	.48
CFSM	.33	.87	1.18	.77	1.70	2.50	5.97	1.93	.79	.29	.12	.10
IN.	.37	.97	1.35	.89	1.77	2.89	6.66	2.22	.89	.33	.14	.11

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CAL YR 1982   TOTAL   6366.00    MEAN 17.4    MAX 194    MIN 3.2     CFSM 1.09    IN 14.89
WTR YR 1983   TOTAL   7950.32    MEAN 21.8    MAX 275    MIN  .48    CFSM 1.37    IN 18.60
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01665500 RAPIDAN RIVER NEAR RUCKERSVILLE, VA

LOCATION.--Lat 38°16'50", long 78°20'25", Madison County, Hydrologic Unit 02080103, on left bank 250 ft downstream from bridge on U.S. Highway 29, 0.2 mi downstream from Elk Run, 1.7 mi upstream from White Run, 3.6 mi northeast of Ruckersville, and at mile 63.5.

DRAINAGE AREA.--114 mi².

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WSP 1171: 1944-45(M). WSP 1382: 1943(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.44 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of beaver dam construction, Oct. 1 to Nov. 30 and Aug. 3 to Sept. 30, which are fair. Diversion 0.4 mi above station since 1973 by Rapidan Service Authority for municipal supply of Greene County and town of Stanardsville has averaged less than 0.25 ft³/s. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--41 years, 149 ft³/s, 17.75 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,700 ft³/s Oct. 15, 1942, gage height, 20.8 ft, from floodmark in gage house, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement at gage height 17.78 ft; minimum daily, 0.90 ft³/s Sept. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 3	0030	*5970	10.18	Apr. 24	1030	2360	5.88
Apr. 10	0600	5840	10.06	June 21	1600	1570	4.72
Apr. 15	1430	2950	6.71				

Minimum daily discharge, 5.5 ft³/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	32	246	75	67	198	220	305	139	62	10	15
2	24	29	258	72	287	190	671	277	129	59	13	12
3	22	33	205	69	551	178	1870	254	121	57	18	11
4	21	83	174	65	368	173	767	236	152	50	14	10
5	21	173	151	64	284	175	548	213	121	63	13	10
6	21	95	139	63	247	183	448	192	108	71	28	9.7
7	19	79	118	60	218	247	396	178	102	47	26	7.9
8	18	68	104	58	191	274	355	173	96	41	21	7.0
9	20	59	96	56	170	288	426	162	88	38	33	6.1
10	22	52	89	74	156	269	2300	147	85	35	44	5.7
11	23	48	88	113	140	247	954	139	81	32	26	5.5
12	24	49	96	91	120	222	669	131	77	30	32	7.7
13	30	63	81	82	150	200	530	125	73	28	22	30
14	34	50	78	80	140	186	445	121	68	26	17	26
15	25	43	75	79	130	171	1210	120	64	23	15	16
16	30	41	574	75	175	156	1010	334	62	22	11	12
17	27	39	401	71	208	145	712	296	58	19	9.0	12
18	25	38	295	66	298	217	563	228	68	20	7.0	11
19	24	37	238	55	309	508	466	205	87	18	8.5	10
20	26	47	200	65	291	421	393	208	92	20	7.5	9.6
21	36	55	170	71	285	407	340	273	356	18	6.5	12
22	30	50	147	68	307	345	300	319	168	20	6.0	21
23	22	50	133	103	365	299	281	314	110	19	6.0	16
24	23	49	122	105	354	267	1480	264	87	19	11	14
25	37	46	112	89	315	239	975	232	76	18	17	13
26	61	44	105	83	265	213	690	215	66	17	13	12
27	51	43	97	80	228	281	547	197	60	15	12	11
28	43	60	93	76	206	338	455	173	58	13	11	9.6
29	37	334	89	73	---	273	388	182	59	12	11	9.4
30	35	204	83	73	---	247	341	166	67	11	12	19
31	34	---	78	71	---	237	---	148	---	11	11	---
TOTAL	889	2093	4935	2325	6825	7794	20750	6527	2978	934	491.5	371.2
MEAN	28.7	69.8	159	75.0	244	251	692	211	99.3	30.1	15.9	12.4
MAX	61	334	574	113	551	508	2300	334	356	71	44	30
MIN	18	29	75	55	67	145	220	120	58	11	6.0	5.5
CFSM	.25	.61	1.40	.66	2.14	2.20	6.07	1.85	.87	.26	.14	.11
IN.	.29	.68	1.61	.76	2.23	2.54	6.77	2.13	.97	.30	.16	.12

CAL YR 1982 TOTAL 61405.0 MEAN 168 MAX 2560 MIN 14 CFSM 1.47 IN 20.04
WTR YR 1983 TOTAL 56912.7 MEAN 156 MAX 2300 MIN 5.5 CFSM 1.37 IN 18.57

01666500 ROBINSON RIVER NEAR LOCUST DALE, VA

LOCATION.--Lat 38°19'30", long 78°05'45", Madison County, Hydrologic Unit 02080103, on right bank 100 ft upstream from bridge on State Highway 614, 1.1 mi upstream from Great Run, 1.7 mi upstream from mouth, 2.0 mi southeast of Locust Dale, and 3.4 mi downstream from Crooked Run.

DRAINAGE AREA.--179 mi².

PERIOD OF RECORD.--July 1943 to current year. Prior to October 1965, published as Robertson River near Locust Dale.

REVISED RECORDS.--WSP 1171: 1948(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 283.70 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Small diurnal fluctuation at low flow caused by Banco Mill 9 mi upstream at State Highway 231. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--40 years, 218 ft³/s, 16.54 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s June 22, 1972, gage height, 20.92 ft, from rating curve extended above 9,100 ft³/s on basis of records for other stations in Rappahannock River basin; minimum, 1.2 ft³/s Sept. 7, 13, 1954; minimum daily, 1.8 ft³/s Sept. 13, 27, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of 23.9 ft, from floodmarks, discharge, about 44,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0630	1870	7.97	Apr. 15	2000	5300	15.18
Apr. 3	0530	5270	13.70	Apr. 24	1430	5440	15.29
Apr. 10	1200	*6110	15.80	June 21	2030	1780	9.02

Minimum discharge, 11 ft³/s Sept. 12, gage height, 1.23 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	52	224	101	106	241	291	408	215	129	33	22
2	39	52	251	99	215	240	281	378	210	133	34	22
3	37	53	194	97	742	223	2730	354	197	121	34	21
4	35	130	171	91	429	216	865	336	255	107	31	20
5	34	208	151	91	319	218	593	311	221	113	30	19
6	35	119	137	92	275	224	488	287	190	155	37	18
7	32	98	121	89	249	300	460	271	180	103	49	16
8	32	87	110	86	229	395	430	263	175	94	42	15
9	34	80	104	84	204	456	432	268	160	88	34	13
10	37	75	97	115	189	358	4040	241	156	85	75	13
11	41	71	98	201	170	316	1400	231	150	79	47	12
12	44	72	109	165	155	277	771	222	141	77	58	13
13	50	93	99	142	210	244	578	214	137	73	51	82
14	67	75	103	132	200	224	487	210	130	68	44	62
15	61	69	102	126	190	210	2420	211	124	64	39	34
16	52	65	545	118	227	192	1730	575	122	61	35	27
17	45	63	411	110	240	179	787	591	116	57	32	26
18	41	62	290	106	324	519	613	376	117	59	33	24
19	38	61	237	82	361	1420	520	318	142	57	37	23
20	37	67	210	90	362	755	452	313	139	61	31	21
21	40	80	187	105	362	607	403	430	506	59	26	22
22	39	81	165	101	405	478	365	517	456	64	23	54
23	37	79	152	143	485	388	342	501	251	59	21	34
24	37	75	143	160	478	337	3640	375	186	58	36	27
25	50	69	135	140	391	300	1490	322	159	55	51	26
26	118	67	129	128	333	267	870	292	136	52	33	26
27	100	66	122	122	281	427	676	304	123	48	28	25
28	80	72	118	117	253	618	574	255	118	44	26	24
29	64	453	115	111	---	397	500	260	119	40	26	23
30	57	242	109	110	---	337	446	254	143	37	24	65
31	54	---	104	107	---	314	---	229	---	35	21	---
TOTAL	1508	2936	5243	3561	8384	11677	29674	10117	5474	2335	1121	829
MEAN	48.6	97.9	169	115	299	377	989	326	182	75.3	36.2	27.6
MAX	118	453	545	201	742	1420	4040	591	506	155	75	82
MIN	32	52	97	82	106	179	281	210	116	35	21	12
CFSM	.27	.55	.94	.64	1.67	2.11	5.53	1.82	1.02	.42	.20	.15
IN.	.31	.61	1.09	.74	1.74	2.43	6.17	2.10	1.14	.49	.23	.17

CAL YR 1982 TOTAL 72885 MEAN 200 MAX 2680 MIN 29 CFSM 1.12 IN 15.15
WTR YR 1983 TOTAL 82859 MEAN 227 MAX 4040 MIN 12 CFSM 1.27 IN 17.22

01667500 RAPIDAN RIVER NEAR CULPEPER, VA

LOCATION.--Lat 38°21'01", long 77°58'31", Culpeper County, Hydrologic Unit 02080103, on left bank 0.7 mi upstream from Cedar Run and bridge on U.S. Highway 522, 8.5 mi south of Culpeper, and at mile 29.6.

DRAINAGE AREA.--472 mi^2.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 741: 1931. WSP 801: 1934(M), 1936(M). WSP 1081: 1943-46. WSP 1171: 1932(M), 1933-35. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 241.36 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by mills at Rapidan and on Robinson River at State Highway 231. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--53 years, 523 ft^3/s, 15.05 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,100 ft^3/s Oct. 16, 1942, gage height, 30.3 ft, from floodmark, from rating curve extended above 43,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 2.1 ft^3/s Oct. 4, 5, 11, 1954; minimum daily, 2.2 ft^3/s Oct. 4, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 3	1445	7230	10.65	Apr. 16	0200	9260	13.06
Apr. 10	2030	*10000	13.78	Apr. 24	2100	9660	13.44

Minimum discharge, 18 ft^3/s Sept. 12, gage height, 0.34 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	113	506	253	250	642	820	1100	482	268	56	43
2	90	110	660	247	369	641	738	995	475	256	54	46
3	85	109	485	240	1730	576	5320	912	428	269	54	43
4	81	140	418	227	1110	545	2400	850	553	234	54	43
5	81	535	370	220	816	533	1680	759	518	261	53	40
6	81	377	335	226	682	544	1390	687	414	302	63	37
7	81	295	302	220	630	769	1310	631	381	217	104	34
8	80	269	270	213	589	1480	1270	599	369	177	94	29
9	80	250	251	204	520	1580	1190	618	335	166	69	26
10	84	236	233	250	476	1120	7270	537	321	159	187	23
11	95	224	229	430	360	941	4710	500	312	148	118	22
12	97	197	261	390	282	810	2360	476	296	144	118	25
13	108	210	242	320	609	695	1780	450	287	138	109	156
14	160	188	209	294	522	626	1480	435	273	130	85	136
15	146	157	235	285	493	586	3770	436	260	123	75	90
16	115	144	1310	272	595	532	5750	1010	259	116	65	63
17	99	141	1330	251	702	490	2410	1620	245	111	59	52
18	90	139	863	239	967	1010	1840	927	239	106	55	49
19	89	137	679	164	1100	2930	1540	744	343	106	51	45
20	91	139	589	230	1110	1740	1320	732	323	109	52	41
21	92	154	520	260	1070	1460	1160	839	682	101	50	40
22	93	168	446	243	1170	1250	1040	1320	1460	99	47	72
23	91	162	403	347	1320	1010	952	1270	594	99	44	79
24	90	158	375	429	1370	884	6180	953	412	95	75	61
25	115	147	352	361	1090	794	4780	788	334	92	120	54
26	225	143	335	319	948	699	2350	694	285	87	100	50
27	209	143	316	297	775	1010	1820	695	253	82	65	48
28	155	149	299	285	686	2160	1550	583	237	74	54	46
29	134	1060	295	268	---	1210	1350	578	237	68	48	45
30	122	656	279	263	---	962	1210	598	279	64	47	72
31	119	---	260	260	---	867	---	526	---	60	44	---
TOTAL	3373	7052	13657	8507	22341	31096	72740	23862	11886	4461	2269	1610
MEAN	109	235	441	274	798	1003	2425	770	396	144	73.2	53.7
MAX	225	1060	1330	430	1730	2930	7270	1620	1460	302	187	156
MIN	80	109	209	164	250	490	738	435	237	60	44	22
CFSM	.23	.50	.93	.58	1.69	2.13	5.14	1.63	.84	.31	.16	.11
IN.	.27	.56	1.08	.67	1.76	2.45	5.73	1.88	.94	.35	.18	.13

CAL YR 1982 TOTAL 192280 MEAN 527 MAX 5390 MIN 60 CFSM 1.12 IN 15.15
WTR YR 1983 TOTAL 202854 MEAN 556 MAX 7270 MIN 22 CFSM 1.18 IN 15.99

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA
(National stream-quality accounting network station)

LOCATION.--Lat 38°19'20", long 77°31'05", Spotsylvania County, Hydrologic Unit 02080104, on right bank 1.6 mi upstream from dam of Virginia Electric and Power Co., 2.2 mi downstream from Motts Run, 3.8 mi upstream from Fredericksburg, and at mile 4.4.

DRAINAGE AREA.--1,596 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1907 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 801: 1924(M). WSP 951: 1937(M). WSP 1302: 1907-12, 1913(M), 1916(M), 1918(M), 1920-21(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.18 ft National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1922, nonrecording gage, and Jan. 15, 1922, to Aug. 2, 1966, water-stage recorder at same site at datum 1.00 ft higher.

REMARKS.--Records good except those for period of no gage-height record, Feb. 9 to Apr. 10, which are fair.

AVERAGE DISCHARGE.--76 years, 1,658 ft³/s, 14.11 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 140,000 ft³/s Oct. 16, 1942, gage height, 26.9 ft, present datum, from floodmarks, from rating curve extended above 76,000 ft³/s on basis of flow over dam and slope-area measurements at gage heights 26.1 ft and 26.9 ft, present datum; minimum, 5 ft³/s Oct. 11, 12, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1889 was probably several feet lower than that of Oct. 16, 1942.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 16,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 20	Unknown	a19000	Unknown	Apr. 16	Unknown	a30000	Unknown
Apr. 3	Unknown	a22000	Unknown	Apr. 25	0500	31900	11.35
Apr. 10	Unknown	*33500	11.63				

a Daily mean discharge, actual peak is known to be greater than the value shown.

Minimum discharge, 64 ft³/s Sept. 12, gage height, 1.03 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	325	326	1710	645	714	2020	2140	2780	1370	920	170	105
2	286	310	2460	630	750	1950	2110	2510	1300	965	162	98
3	266	296	1800	616	4370	1740	22000	2320	1250	920	154	95
4	255	305	1320	597	3860	1630	11000	2160	1270	850	147	92
5	247	1500	1130	572	2490	1570	5500	1990	1630	870	152	91
6	259	1460	981	563	1940	1500	3950	1810	1310	1240	152	89
7	253	808	871	578	1770	1900	3200	1660	1140	952	199	91
8	249	599	763	569	1780	2900	3100	1570	1310	634	231	86
9	250	514	680	549	1720	4200	3000	1580	1090	524	264	81
10	249	468	633	568	1450	3500	32000	1520	966	478	212	78
11	247	430	608	1370	1200	2900	26000	1360	935	447	239	69
12	267	406	651	1670	1180	2450	11000	1290	910	416	294	67
13	298	441	695	1190	2400	2180	7000	1230	890	396	255	87
14	318	564	608	967	2100	1950	4600	1190	850	379	326	184
15	391	504	570	875	1700	1720	12000	1190	820	358	254	310
16	441	427	2130	829	1650	1580	30000	1960	790	335	208	320
17	357	391	5590	765	1990	1460	15000	8550	770	315	182	214
18	299	371	2630	682	2450	3800	7000	3640	760	320	167	166
19	272	365	1860	592	3200	11000	4600	2490	990	364	155	144
20	258	362	1520	535	3620	19000	3730	2140	956	346	147	129
21	262	365	1370	637	3500	4750	3190	2150	1210	318	149	124
22	260	389	1200	702	3800	3900	2790	4270	2740	296	146	135
23	255	417	1040	775	4400	3200	2540	3800	2020	303	138	134
24	254	407	952	1320	4350	2700	15400	2900	1300	286	126	191
25	299	391	892	1310	3450	2320	26100	2230	1020	263	117	172
26	502	372	852	1050	2830	2000	8750	1910	925	254	108	146
27	876	359	814	911	2380	3000	5660	1860	913	243	143	132
28	646	366	763	847	2050	4900	4410	1750	871	230	139	122
29	470	2340	750	791	---	6200	3630	1560	831	216	137	115
30	387	3280	734	741	---	2650	3120	1650	855	197	123	129
31	347	---	682	730	---	2300	---	1560	---	182	113	---
TOTAL	10345	19533	39259	25176	69094	108870	284520	70580	33992	14817	5509	3996
MEAN	334	651	1266	812	2468	3512	9484	2277	1133	478	178	133
MAX	876	3280	5590	1670	4400	19000	32000	8550	2740	1240	326	320
MIN	247	296	570	535	714	1460	2110	1190	760	182	108	67
CFSM	.21	.41	.79	.51	1.55	2.20	5.94	1.43	.71	.30	.11	.08
IN.	.24	.46	.92	.59	1.61	2.54	6.63	1.65	.79	.35	.13	.09

CAL YR 1982 TOTAL 545664 MEAN 1495 MAX 18200 MIN 149 CFSM .94 IN 12.72
WTR YR 1983 TOTAL 685691 MEAN 1879 MAX 32000 MIN 67 CFSM 1.18 IN 15.98

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples taken at south bank of river 1.5 mi upstream from discharge station.

PERIOD OF RECORD.--Water years 1929-30, 1956, 1967-74, 1978 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1955 to September 1956, April 1968 to August 1974.
WATER TEMPERATURES: October 1955 to September 1956, April 1968 to August 1974.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
NOV 24...	1030	405	84	7.4	13.0	2.2	9.4	18	82	26
JAN 18...	1000	687	75	6.8	.5	3.7	13.6	13	37	24
MAR 14...	1200	2000	71	7.1	9.0	10	11.3	91	35	24
APR 18...	1030	6010	60	6.6	10.5	36	10.5	1300	900	19
JUN 06...	1030	1310	68	7.4	21.0	4.9	8.3	K1900	210	22
AUG 30...	1030	123	76	7.5	27.0	2.0	7.4	32	300	23

K Result based on colony count outside optimal range.

DATE	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 24...	1	6.7	2.3	4.0	1.5	25	7.0	5.1	<.10	8.9
JAN 18...	5	6.1	2.1	3.7	1.3	19	8.2	4.4	<.10	12
MAR 14...	8	5.8	2.2	3.4	1.1	16	9.7	4.5	<.10	11
APR 18...	6	4.9	1.7	2.4	1.2	13	10	3.2	<.10	11
JUN 06...	2	5.6	1.9	3.2	1.4	20	6.3	3.7	.10	11
AUG 30...	0	5.1	2.5	4.7	2.6	25	6.3	5.1	.10	5.6

< Actual value is known to be less than the value shown.

01668000 RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 24...	52	51	.14	.010	.20	.020	<.010	<.010	--	1
JAN 18...	54	49	.68	.020	<.10	.080	.080	<.010	--	--
MAR 14...	--	48	.81	<.010	.20	.040	.010	.020	40	1
APR 18...	52	42	.69	.020	.40	.110	.020	.010	40	<1
JUN 06...	57	45	.51	<.010	.20	.030	.020	<.010	--	--
AUG 30...	45	47	<.10	<.010	.40	.020	.020	.020	<10	1

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 24...	26	<1	<1	<1	<3	<1	220	1	10	22
JAN 18...	--	--	--	--	--	--	--	--	--	--
MAR 14...	22	<1	<1	<1	<3	1	100	6	<4	10
APR 18...	23	<1	<1	3	<3	<1	130	4	<4	12
JUN 06...	--	--	--	--	--	--	--	--	--	--
AUG 30...	23	<1	<1	<1	<3	1	97	1	<4	20

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 24...	<.1	10	<1	<1	<1	37	<6.0	<4	3	85
JAN 18...	--	--	--	--	--	--	--	--	4	98
MAR 14...	.3	<10	1	<1	<1	28	<6.0	<3	12	95
APR 18...	.2	<10	1	<1	<1	22	<6.0	<3	76	--
JUN 06...	--	--	--	--	--	--	--	--	7	98
AUG 30...	.1	<10	1	<1	<1	37	<6.0	4	2	100

< Actual value is known to be less than the value shown.

01668500 CAT POINT CREEK NEAR MONTROSS, VA

LOCATION.--Lat 38°02'23", long 76°49'38", Richmond County, Hydrologic Unit 02080104, on right bank 200 ft upstream from bridge on State Highway 637, 1.7 mi west of Farmers Fork, 3.8 mi south of Montross, and 11.4 mi upstream from mouth.

DRAINAGE AREA.--45.6 mi^2.

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1382: 1944(M), 1945, 1946-51(M), 1952(P), 1953-54(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.04 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 19, 1953, nonrecording gage near right bank at downstream side of highway bridge at same datum.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 44.4 ft^3/s, 13.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,820 ft^3/s Aug. 20, 1969, gage height, 10.45 ft, from rating curve extended above 1,400 ft^3/s; no flow at times in 1943, 1957, 1959, 1960, 1966, and 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1935 exceeded 9.3 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 21	1600	648	6.28	May 23	1900	335	5.67
Apr. 16	1200	*1030	6.86				

Minimum discharge, 0.20 ft^3/s July 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	14	43	30	25	105	87	99	89	3.6	.62	6.0
2	9.8	14	41	29	28	233	83	96	76	3.0	.50	5.3
3	9.2	14	36	28	34	152	104	93	66	2.3	.46	5.3
4	9.0	18	33	27	32	88	93	103	60	1.8	.42	5.0
5	10	140	30	27	28	79	78	99	53	2.6	1.1	4.7
6	13	128	30	30	27	75	76	92	46	3.5	6.9	4.2
7	12	72	32	30	30	76	77	87	41	2.5	5.5	3.5
8	11	33	32	29	32	89	78	84	50	1.5	4.4	3.5
9	11	30	30	28	30	88	76	84	41	1.0	3.8	2.7
10	10	28	28	29	29	83	162	82	34	.48	3.4	2.2
11	10	27	29	33	27	77	225	79	28	.40	3.1	1.9
12	10	27	36	32	29	72	203	76	23	.40	6.0	1.8
13	11	48	36	29	35	68	160	75	19	.35	5.7	14
14	12	53	33	28	38	65	144	74	16	.40	5.6	12
15	12	51	33	29	44	63	174	72	13	.40	5.4	12
16	12	40	49	28	51	62	836	82	11	.40	4.8	11
17	12	35	64	28	63	61	345	100	10	.40	4.3	10
18	11	33	49	26	76	112	213	91	9.2	.40	3.7	9.0
19	11	30	39	24	78	176	175	79	8.6	.40	3.1	7.7
20	11	28	37	23	78	151	156	85	10	.48	2.8	6.8
21	12	28	35	23	76	408	145	86	25	2.4	2.3	7.3
22	12	27	32	24	71	403	138	120	23	2.0	2.1	24
23	12	27	31	33	73	197	134	269	13	1.9	2.4	18
24	12	26	30	35	72	160	191	209	8.8	1.9	2.9	16
25	23	26	29	31	68	147	194	109	6.5	1.6	2.4	14
26	37	26	29	28	65	137	141	92	5.5	1.3	2.2	12
27	27	26	28	26	62	141	120	105	5.3	1.2	1.8	11
28	19	27	28	26	61	191	113	92	4.4	1.0	2.3	10
29	17	43	31	25	---	153	108	88	4.2	.94	2.8	10
30	16	45	34	25	---	118	103	103	4.4	.84	3.5	31
31	14	---	32	25	---	100	---	118	---	.68	3.2	---
TOTAL	418.0	1164	1079	868	1362	4130	4932	3123	803.9	42.07	99.50	281.9
MEAN	13.5	38.8	34.8	28.0	48.6	133	164	101	26.8	1.36	3.21	9.40
MAX	37	140	64	35	78	408	836	269	89	3.6	6.9	31
MIN	9.0	14	28	23	25	61	76	72	4.2	.35	.42	1.8
CFSM	.30	.85	.76	.61	1.07	2.92	3.60	2.22	.59	.03	.07	.21
IN.	.34	.95	.88	.71	1.11	3.37	4.02	2.55	.66	.03	.08	.23

CAL YR 1982 TOTAL 12419.00 MEAN 34.0 MAX 428 MIN 3.7 CFSM .75 IN 10.13
WTR YR 1983 TOTAL 18303.37 MEAN 50.1 MAX 836 MIN .35 CFSM 1.10 IN 14.93

01668800 HOSKINS CREEK NEAR TAPPAHANNOCK, VA

LOCATION.--Lat 37°55'38", long 76°57'16", Essex County, Hydrologic Unit 02080104, at bridge on State Highway 717, 0.4 mi upstream from Criddlin Swamp, 2.9 mi downstream from site of Hutchinson Mill Pond (destroyed by flood of August 1969), and 5.0 mi west of Tappahannock.

DRAINAGE AREA.--15.5 mi^2.

PERIOD OF RECORD.--October 1964 to September 1969, June 1970 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 36.28 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--18 years, 16.8 ft^3/s, 14.72 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,380 ft^3/s Aug. 20, 1969, gage height, 10.23 ft, from rating curve extended above 100 ft^3/s on basis of velocity-area study; minimum, 0.20 ft^3/s Sept. 12, 13, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 21	1530	243	4.63	May 23	0230	118	3.88
Apr. 16	0330	*315	4.94				

Minimum daily discharge, 1.4 ft^3/s Aug. 23-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	6.7	20	17	10	23	25	24	28	11	3.8	2.2
2	5.0	6.8	19	15	13	43	24	24	24	10	3.8	2.3
3	4.7	7.1	15	14	20	28	38	23	20	9.3	4.2	2.4
4	4.5	11	12	13	16	22	29	29	21	9.7	4.2	2.2
5	4.9	42	11	13	12	19	24	27	20	12	4.4	2.0
6	8.3	34	11	16	14	19	23	23	17	27	4.1	1.8
7	6.8	15	11	15	17	20	24	21	18	13	5.0	1.7
8	5.8	10	9.5	13	17	25	26	21	30	8.9	7.9	1.6
9	5.3	9.1	9.1	12	14	24	25	22	25	7.7	5.1	1.5
10	5.2	8.4	8.8	13	13	21	42	21	20	6.7	2.9	1.9
11	5.0	8.2	9.5	17	14	20	42	20	16	6.3	2.4	1.9
12	5.0	7.9	17	14	16	18	32	18	14	5.9	5.3	2.1
13	5.8	28	16	12	17	16	27	18	14	6.0	5.7	3.0
14	7.0	32	13	11	17	15	24	17	13	5.7	4.2	4.3
15	6.6	28	12	12	19	14	48	17	12	5.1	3.2	4.3
16	6.1	18	35	13	22	14	212	23	12	5.0	2.6	3.7
17	5.8	12	48	11	24	14	74	30	11	4.5	2.3	3.2
18	5.8	11	30	9.8	26	32	49	23	11	4.4	2.0	3.0
19	5.7	9.9	22	9.3	26	37	41	19	11	6.6	1.9	2.8
20	5.9	9.7	21	8.8	23	26	36	22	16	9.5	1.7	2.6
21	6.1	9.5	20	9.3	20	120	33	22	36	13	1.6	3.8
22	6.0	9.1	18	11	19	75	32	44	26	11	1.5	11
23	5.8	9.7	16	23	20	40	30	100	18	7.2	1.4	8.8
24	6.0	8.8	16	21	20	32	60	47	14	6.6	1.4	5.9
25	21	7.9	15	16	17	28	51	29	12	6.1	1.4	5.0
26	41	7.9	15	14	16	26	35	24	11	5.7	1.4	5.1
27	23	8.0	14	12	14	30	30	30	10	5.6	1.4	5.1
28	13	8.8	14	11	14	53	28	26	9.5	5.2	1.4	4.4
29	9.2	20	19	11	---	37	26	25	11	4.8	1.4	3.7
30	7.8	19	23	11	---	28	25	28	12	4.3	1.4	12
31	7.0	---	18	11	---	26	---	28	---	4.0	1.6	---
TOTAL	260.9	423.5	537.9	409.2	490	945	1215	845	512.5	247.8	92.6	115.3
MEAN	8.42	14.1	17.4	13.2	17.5	30.5	40.5	27.3	17.1	7.99	2.99	3.84
MAX	41	42	48	23	26	120	212	100	36	27	7.9	12
MIN	4.5	6.7	8.8	8.8	10	14	23	17	9.5	4.0	1.4	1.5
CFSM	.54	.91	1.12	.85	1.13	1.97	2.61	1.76	1.10	.52	.19	.25
IN.	.63	1.02	1.29	.98	1.18	2.27	2.92	2.03	1.23	.59	.22	.28

CAL YR 1982 TOTAL 5153.7 MEAN 14.1 MAX 98 MIN 4.1 CFSM .91 IN 12.37
WTR YR 1983 TOTAL 6094.7 MEAN 16.7 MAX 212 MIN 1.4 CFSM 1.08 IN 14.63

01669000 PISCATAWAY CREEK NEAR TAPPAHANNOCK, VA

LOCATION.--Lat 37°52'37", long 76°54'03", Essex County, Hydrologic Unit 02080104, on right bank at upstream side of bridge on State Highway 691, 0.6 mi south of Henley Fork, 2.3 mi downstream from Sturgeon Swamp, and 4.2 mi southwest of Tappahannock.

DRAINAGE AREA.--28.0 mi².

PERIOD OF RECORD.--July 1951 to current year.

REVISED RECORDS.--WSP 2103: Drainage area. WDR VA-79-1: 1970-76(P), 1978(P).

GAGE.--Water-stage recorder. Datum of gage is 2.50 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 32.3 ft³/s, 15.67 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft³/s Aug. 20, 1969, gage height, 7.52 ft, from rating curve extended above 1,400 ft³/s; minimum, 0.01 ft³/s Oct. 2, 1954, gage height, 0.33 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 21	2100	391	4.17	Apr. 16	0930	*532	4.64

Minimum discharge, 0.42 ft³/s Sept. 12-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	27	29	32	23	55	56	59	34	18	3.0	3.0
2	6.8	17	32	29	27	127	53	57	35	15	3.2	3.9
3	5.8	15	26	29	40	66	68	54	32	12	3.2	4.7
4	5.5	23	21	25	34	49	63	64	34	11	3.5	3.8
5	7.0	93	21	25	26	44	54	62	37	10	3.8	3.4
6	10	56	23	31	25	42	55	50	30	16	3.9	2.6
7	8.2	27	22	31	32	47	58	46	27	20	4.3	2.2
8	7.3	18	18	27	38	55	60	45	44	13	5.5	1.8
9	6.7	15	16	24	32	57	57	44	44	10	9.9	1.3
10	5.8	14	14	29	28	50	95	42	30	8.9	7.0	1.0
11	5.3	13	16	35	30	45	114	40	25	7.9	5.5	.82
12	5.8	12	28	30	38	42	78	39	22	7.4	6.3	.51
13	7.8	24	29	24	38	39	64	38	20	7.1	7.1	.52
14	12	31	23	23	37	38	59	36	19	6.8	7.0	1.9
15	14	32	22	24	42	36	103	35	17	6.5	5.6	6.2
16	11	30	49	24	47	35	428	47	17	6.0	4.7	6.7
17	8.0	23	84	24	49	34	197	63	16	5.4	4.0	5.3
18	6.9	19	49	22	51	66	132	45	14	4.9	3.6	4.1
19	6.5	16	39	20	53	83	105	37	14	5.0	3.0	3.0
20	6.3	15	37	18	48	56	87	44	17	6.5	2.5	1.8
21	7.2	15	33	18	44	240	79	47	30	9.4	2.3	2.9
22	6.8	14	29	21	41	221	74	61	36	9.6	2.3	13
23	7.0	14	26	41	44	101	72	102	27	8.3	2.1	16
24	6.9	14	25	44	44	78	154	62	19	8.0	1.8	10
25	21	13	25	32	40	70	129	44	16	6.7	1.5	6.8
26	57	12	25	26	36	64	82	37	14	6.1	1.3	5.3
27	39	13	24	24	33	67	72	35	12	5.6	1.3	4.8
28	21	15	24	23	32	118	68	34	12	5.0	1.3	4.7
29	15	28	38	22	---	77	64	33	13	4.2	1.4	4.2
30	13	32	51	22	---	61	61	41	16	3.6	1.3	14
31	18	---	39	23	---	57	---	43	---	3.3	1.7	---
TOTAL	366.2	690	937	822	1052	2220	2841	1486	723	267.2	114.9	140.25
MEAN	11.8	23.0	30.2	26.5	37.6	71.6	94.7	47.9	24.1	8.62	3.71	4.68
MAX	57	93	84	44	53	240	428	102	44	20	9.9	16
MIN	5.3	12	14	18	23	34	53	33	12	3.3	1.3	.51
CFSM	.42	.82	1.08	.95	1.34	2.56	3.38	1.71	.86	.31	.13	.17
IN.	.49	.92	1.24	1.09	1.40	2.95	3.77	1.97	.96	.35	.15	.19

CAL YR 1982 TOTAL 8763.30 MEAN 24.0 MAX 128 MIN 2.5 CFSM .86 IN 11.64
WTR YR 1983 TOTAL 11659.55 MEAN 31.9 MAX 428 MIN .51 CFSM 1.14 IN 15.49

01669520 DRAGON SWAMP AT MASCOT, VA

LOCATION.--Lat 37°38'01", long 76°41'48", King and Queen County, Hydrologic Unit 02080102, on right bank at upstream side of bridge on State Highway 603, 0.8 mi east of Mascot, 2.1 mi downstream from Church Swamp, and 3.3 mi west of Warner.

DRAINAGE AREA.--108 mi².

PERIOD OF RECORD.--August 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 21.60 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft³/s Apr. 17, 1983, gage height, 8.85 ft, from rating curve extended above 1,400 ft³/s; minimum, 0.30 ft³/s Sept. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 23	1330	856	7.03	Apr. 17	0700	*2530	8.85

Minimum discharge, 0.64 ft³/s Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	67	84	118	83	166	257	210	141	91	1.6	42
2	62	63	92	122	84	230	223	192	149	69	1.4	17
3	56	56	103	133	97	263	208	178	133	53	1.1	12
4	48	51	109	124	99	282	200	186	117	43	.68	8.9
5	37	64	107	121	98	278	197	180	105	38	1.1	8.5
6	31	57	130	150	100	232	202	172	97	38	3.4	5.7
7	26	51	130	142	123	196	213	167	95	35	7.4	4.4
8	23	52	108	130	131	188	211	160	124	30	13	3.3
9	21	57	118	118	123	188	200	153	126	42	9.1	2.8
10	20	68	107	116	116	198	217	144	120	56	9.1	2.5
11	19	72	100	121	115	196	241	134	116	54	6.6	2.6
12	18	69	127	119	120	184	279	126	116	42	8.5	2.6
13	27	86	135	114	125	169	322	117	120	29	7.6	4.4
14	44	91	125	110	137	152	309	109	111	20	7.4	5.9
15	43	118	120	112	179	139	279	103	89	13	5.9	6.3
16	41	122	170	110	214	129	1380	100	70	9.4	4.9	4.5
17	37	117	240	104	246	120	2380	106	54	6.6	4.5	3.9
18	36	118	246	96	280	168	1400	108	42	4.4	4.7	3.7
19	33	118	254	94	280	246	731	120	33	3.9	4.1	3.4
20	33	112	246	83	268	293	488	172	60	5.5	3.6	3.1
21	32	103	216	69	250	329	365	233	132	5.0	1.8	5.0
22	30	93	179	70	224	428	312	233	101	4.2	1.2	40
23	28	84	151	107	213	785	275	217	190	2.3	6.6	22
24	26	74	135	118	195	641	348	190	170	2.0	8.3	16
25	42	64	122	118	185	395	456	173	120	1.5	6.3	13
26	53	58	113	121	178	292	496	185	84	2.2	5.2	11
27	52	56	106	122	164	248	443	237	61	3.9	5.2	8.9
28	57	54	99	115	151	296	353	223	48	4.4	5.5	7.6
29	60	71	98	104	---	312	284	183	63	3.9	10	6.6
30	64	79	106	95	---	314	239	153	65	3.1	7.2	25
31	70	---	113	90	---	299	---	138	---	2.1	12	---
TOTAL	1230	2345	4289	3466	4578	8356	13508	5102	3052	717.4	174.98	302.6
MEAN	39.7	78.2	138	112	164	270	450	165	102	23.1	5.64	10.1
MAX	70	122	254	150	280	785	2380	237	190	91	13	42
MIN	18	51	84	69	83	120	197	100	33	1.5	.68	2.5
CFSM	.37	.72	1.28	1.04	1.52	2.50	4.17	1.53	.94	.21	.05	.09
IN.	.42	.81	1.48	1.19	1.58	2.88	4.65	1.76	1.05	.25	.06	.10

CAL YR 1982 TOTAL 36897.00 MEAN 101 MAX 608 MIN 10 CFSM .94 IN 12.71
WTR YR 1983 TOTAL 47120.98 MEAN 129 MAX 2380 MIN .68 CFSM 1.19 IN 16.23

01670000 BEAVERDAM SWAMP NEAR ARK, VA

LOCATION.--Lat 37°28'14", long 76°33'48", Gloucester County, Hydrologic Unit 02080102, on right bank 300 ft downstream from bridge on State Highway 606, 1.4 mi upstream from Beech Swamp, 2.3 mi north of Ark, and 4.3 mi northwest of Gloucester.

DRAINAGE AREA.--6.63 mi².

PERIOD OF RECORD.--October 1949 to current year.

REVISED RECORDS.--WSP 1502: 1950, 1951-52(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 36.43 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--34 years, 7.16 ft³/s, 14.67 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 570 ft³/s Sept. 12, 1960, gage height, 5.88 ft, from rating curve extended above 130 ft³/s; no flow July 30 to Aug. 2, 1953, Aug. 18, Sept. 4, Sept. 29 to Oct. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 123 ft³/s at 0830 hours Apr. 16, gage height, 3.68 ft, no other peak above base of 65 ft³/s; minimum daily, 0.14 ft³/s Aug. 22-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.3	8.5	7.8	6.1	18	11	10	5.7	3.8	.17	12
2	1.7	2.2	8.8	7.1	6.4	28	9.8	10	11	2.9	.23	7.5
3	1.4	2.3	6.6	7.8	9.0	15	12	9.6	9.2	2.2	.23	2.9
4	1.2	2.6	5.7	7.8	7.4	12	10	14	6.9	1.9	.23	1.6
5	1.4	4.4	5.1	7.2	6.2	11	9.1	12	6.2	2.2	.29	1.3
6	1.8	4.5	5.7	8.5	6.5	11	9.1	9.2	5.2	2.3	.60	.90
7	1.6	3.3	7.4	7.8	12	20	10	8.3	4.6	1.8	.85	.80
8	1.7	2.7	5.9	6.9	10	26	10	8.0	8.8	1.3	1.3	.65
9	1.7	2.5	4.8	6.4	8.5	18	9.4	7.8	14	1.1	3.2	.55
10	1.5	2.7	4.2	7.4	8.3	16	15	6.6	7.7	.95	2.2	.47
11	1.5	2.6	5.3	8.8	13	14	13	6.5	5.3	.80	1.5	.38
12	1.8	2.7	11	7.7	26	12	9.2	6.2	4.1	.75	1.1	.26
13	3.0	7.3	11	6.6	15	10	8.0	5.9	3.4	.70	.85	.35
14	6.1	9.2	7.4	5.9	15	9.0	7.4	5.8	2.9	.75	.65	1.2
15	5.7	13	7.5	7.1	25	8.6	9.0	5.7	2.5	.70	.44	1.2
16	3.5	12	14	7.4	18	8.0	68	7.2	2.2	.55	.26	.85
17	2.6	7.2	18	6.5	20	7.7	23	11	1.9	.50	.15	.70
18	2.2	5.6	10	5.8	23	28	18	7.4	1.8	.38	.18	.38
19	1.8	5.0	8.2	5.0	15	27	18	6.1	1.7	.47	.15	.35
20	1.8	4.5	7.7	4.6	12	16	15	12	1.8	.80	.18	.35
21	1.8	4.1	7.1	5.0	11	15	12	14	5.8	.70	.17	.55
22	1.8	3.9	6.2	6.1	9.8	14	11	9.2	9.8	.50	.14	5.1
23	1.8	3.6	5.8	10	12	11	11	9.2	6.9	.41	.14	3.1
24	1.6	3.4	5.7	9.6	12	10	30	7.2	4.2	.38	.14	1.0
25	5.9	3.1	5.7	7.5	10	9.4	26	5.6	2.8	.35	.14	.50
26	9.8	3.3	6.9	6.5	9.2	8.6	18	13	2.0	.35	.15	.50
27	5.6	4.0	7.4	5.8	8.3	11	15	17	1.7	.32	.17	.50
28	3.1	4.5	7.4	5.9	7.8	21	13	10	1.5	.23	.18	.55
29	2.2	8.8	7.7	5.8	---	12	12	6.9	2.2	.20	.32	.65
30	2.1	10	8.5	5.7	---	10	11	6.2	4.7	.18	.65	1.1
31	2.1	---	8.2	6.1	---	10	---	5.9	---	.17	3.3	---
TOTAL	83.8	147.3	239.4	214.1	342.5	447.3	453.0	273.5	148.5	30.64	20.26	48.24
MEAN	2.70	4.91	7.72	6.91	12.2	14.4	15.1	8.82	4.95	.99	.65	1.61
MAX	9.8	13	18	10	26	28	68	17	14	3.8	3.3	12
MIN	1.2	2.2	4.2	4.6	6.1	7.7	7.4	5.6	1.5	.17	.14	.26
CFSM	.41	.74	1.16	1.04	1.84	2.17	2.28	1.33	.75	.15	.10	.24
IN.	.47	.83	1.34	1.20	1.92	2.51	2.54	1.53	.83	.17	.11	.27

CAL YR 1982 TOTAL 2003.41 MEAN 5.49 MAX 68 MIN .26 CFSM .83 IN 11.24
WTR YR 1983 TOTAL 2448.54 MEAN 6.71 MAX 68 MIN .14 CFSM 1.01 IN 13.74

01670300 CONTRARY CREEK NEAR MINERAL, VA

LOCATION.--Lat 38°03'53", long 77°52'45", Louisa County, Hydrologic Unit 02080106, on left bank 400 ft downstream from bridge on State Highway 522 and 4.0 mi northeast of Mineral.

DRAINAGE AREA.--5.53 mi².

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 275 ft, from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--8 years, 4.80 ft³/s, 11.79 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 701 ft³/s Jan. 26, 1978, gage height, 3.33 ft, from rating curve extended above 310 ft³/s; minimum, 0.03 ft³/s Aug. 22, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 15	1600	350	2.63	Apr. 24	0800	*446	2.82

Minimum discharge, 0.03 ft³/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.3	7.0	2.6	2.4	4.4	5.1	4.3	2.4	1.8	.06	.31
2	.88	1.1	5.6	2.6	14	6.0	9.8	3.8	2.6	1.4	.06	.09
3	.68	1.1	3.6	2.6	12	3.6	35	3.6	2.4	1.0	.05	.06
4	.68	2.6	3.4	2.4	4.6	3.1	8.9	3.8	2.4	1.0	.05	.05
5	.68	3.6	2.8	2.8	3.6	3.1	6.0	3.6	2.2	3.0	.06	.05
6	.68	2.1	2.8	3.4	3.6	3.6	5.1	3.4	1.8	2.9	.07	.04
7	.68	1.7	2.4	2.8	4.1	6.5	8.9	3.1	1.8	1.3	.12	.04
8	.68	1.5	2.1	2.6	5.1	10	8.9	3.1	2.0	1.0	.07	.04
9	.68	1.5	2.1	2.6	4.6	7.0	13	2.9	1.8	.94	.05	.04
10	.76	1.5	2.1	3.8	4.1	5.6	48	2.6	1.6	.84	.05	.04
11	.88	1.3	2.4	4.6	4.1	4.4	16	2.6	1.4	.75	.31	.04
12	.88	1.5	4.6	3.4	4.1	3.4	8.0	2.4	1.4	.75	.75	.04
13	1.7	8.4	3.4	2.8	4.1	3.1	6.0	2.4	1.3	.66	.31	.06
14	1.9	3.4	2.6	2.6	3.8	2.8	5.1	2.4	1.2	.66	.20	.12
15	1.0	2.4	3.1	2.6	4.4	2.8	74	2.4	1.2	.58	.12	.08
16	.88	2.1	19	2.6	7.5	2.8	29	30	1.2	.50	.09	.06
17	.76	2.1	7.0	2.6	11	2.8	12	9.4	1.0	.50	.07	.05
18	.76	2.1	4.1	2.1	14	18	8.0	4.3	3.6	.43	.08	.05
19	.68	1.9	3.4	2.1	12	19	6.5	3.6	3.6	.37	.12	.04
20	.68	1.9	3.4	2.4	8.9	7.0	5.1	3.8	2.2	.37	.06	.04
21	.76	1.9	3.1	2.6	6.5	44	4.6	4.8	4.3	.37	.04	.06
22	.76	1.9	2.6	2.8	5.6	13	4.4	15	3.8	.50	.04	.15
23	.76	1.9	2.6	7.0	7.0	7.0	4.6	8.5	2.0	.37	.04	.08
24	.76	1.7	2.6	4.6	5.6	5.6	153	4.1	1.4	.43	.04	.07
25	4.1	1.7	2.6	3.6	4.6	4.4	23	3.6	1.3	.43	.04	.06
26	4.4	1.7	2.4	3.1	4.1	4.1	10	3.1	1.0	.37	.04	.07
27	2.1	1.7	2.4	3.1	3.6	32	7.1	2.9	1.0	.25	.04	.06
28	1.7	2.6	2.6	2.8	3.4	25	5.3	2.6	1.0	.15	.04	.06
29	1.5	17	3.4	2.6	---	8.4	4.8	3.8	3.1	.09	.04	.05
30	1.5	4.6	3.6	2.6	---	5.6	4.3	3.4	2.2	.08	.04	1.8
31	1.3	---	2.8	2.4	---	5.6	---	2.6	---	.07	.05	---
TOTAL	37.16	81.8	117.6	93.2	172.4	273.7	539.5	151.9	60.2	23.86	3.20	3.80
MEAN	1.20	2.73	3.79	3.01	6.16	8.83	18.0	4.90	2.01	.77	.10	.13
MAX	4.4	17	19	7.0	14	44	153	30	4.3	3.0	.75	1.8
MIN	.68	1.1	2.1	2.1	2.4	2.8	4.3	2.4	1.0	.07	.04	.04
CFSM	.22	.49	.69	.54	1.11	1.60	3.26	.89	.36	.14	.02	.02
IN.	.25	.55	.79	.63	1.16	1.84	3.63	1.02	.40	.16	.02	.03

CAL YR 1982 TOTAL 1493.63 MEAN 4.09 MAX 72 MIN .10 CFSM .74 IN 10.05
WTR YR 1983 TOTAL 1558.32 MEAN 4.27 MAX 153 MIN .04 CFSM .77 IN 10.48

01670400 NORTH ANNA RIVER NEAR PARTLOW, VA

LOCATION.--Lat 38°00'46", long 77°42'05", Spotsylvania County, Hydrologic Unit 02080106, on left bank 175 ft downstream from bridge on State Highway 601, 3.8 mi southwest of Partlow, and 1.1 mi upstream from Northeast Creek.

DRAINAGE AREA.--344 mi².

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 168.25 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, Apr. 24-26, which are fair. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft 0.5 mi upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--5 years, 273 ft³/s, 10.78 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s Feb. 26, 1979, gage height, 25.30 ft, from rating curve extended above 7,200 ft³/s; minimum, 33 ft³/s Sept. 27, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1972, reached a stage of 36.32 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,200 ft³/s Apr. 25, gage height, 15.19 ft, from floodmark; minimum, 40 ft³/s July 13; minimum daily, 42 ft³/s July 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	74	67	157	57	322	293	282	296	56	65	62
2	56	63	67	84	250	322	296	213	194	59	62	59
3	56	56	57	84	372	333	1110	148	47	59	60	62
4	56	63	76	82	376	258	1840	293	62	59	59	57
5	57	65	71	191	376	104	1810	289	98	152	62	55
6	60	56	70	177	372	151	671	230	98	376	60	55
7	60	56	56	92	376	307	275	90	161	230	60	56
8	60	56	53	92	376	644	278	43	134	43	56	55
9	63	56	53	92	329	1550	293	44	82	43	56	52
10	65	55	55	168	268	1530	1770	43	43	43	56	57
11	62	55	55	333	261	1040	1940	52	43	42	67	57
12	60	55	246	132	264	311	1900	60	43	42	65	57
13	59	71	322	46	264	314	1880	62	43	43	57	57
14	60	65	318	45	268	181	687	69	43	46	52	53
15	62	65	147	192	272	53	821	212	43	47	53	55
16	63	62	267	258	275	50	3950	880	43	47	56	57
17	57	60	360	78	314	53	2960	1680	43	47	60	60
18	57	63	356	47	364	322	2120	1620	84	47	56	59
19	56	69	352	46	368	619	1310	1520	341	49	53	60
20	56	69	352	46	384	1720	1080	293	261	53	53	63
21	56	69	352	46	392	1720	272	140	356	59	56	62
22	56	69	256	53	392	1000	272	254	329	67	62	63
23	56	71	206	311	1380	293	272	348	318	57	71	57
24	56	76	348	192	1370	293	2490	341	304	57	71	57
25	65	69	348	52	320	293	4620	341	159	55	71	53
26	60	69	352	52	320	146	3040	341	47	53	69	55
27	50	67	198	53	320	180	1630	341	52	55	69	52
28	52	67	107	53	320	1470	897	313	55	63	63	52
29	52	80	289	53	---	1540	286	289	56	60	62	50
30	56	63	293	55	---	1510	282	293	56	59	60	53
31	69	---	280	56	---	848	---	300	---	63	60	---
TOTAL	1809	1934	6429	3418	11000	19477	41345	11424	3934	2231	1882	1702
MEAN	58.4	64.5	207	110	393	628	1378	369	131	72.0	60.7	56.7
MAX	69	80	360	333	1380	1720	4620	1680	356	376	71	63
MIN	50	55	53	45	57	50	272	43	43	42	52	50
CFSM	.17	.19	.60	.32	1.14	1.83	4.01	1.07	.38	.21	.18	.17
IN.	.20	.21	.70	.37	1.19	2.11	4.47	1.24	.43	.24	.20	.18

CAL YR 1982 TOTAL 79951 MEAN 219 MAX 4080 MIN 43 CFSM .64 IN 8.65
WTR YR 1983 TOTAL 106585 MEAN 292 MAX 4620 MIN 42 CFSM .85 IN 11.53

01671000 NORTH ANNA RIVER NEAR DOSWELL, VA

LOCATION.--Lat 37°53'15", long 77°29'15", Caroline County, Hydrologic Unit 02080106, on left bank 1.5 mi upstream from bridge on U.S. Highway 1, 2.5 mi northwest of Doswell, and 4.4 mi upstream from Bull Run.

DRAINAGE AREA.--441 mi².

PERIOD OF RECORD.--March 1926 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "near Hewlett," 1926-28.

REVISED RECORDS.--WSP 1171: 1943. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.66 ft National Geodetic Vertical Datum of 1929. Mar. 23, 1926, to Aug. 11, 1928, nonrecording gage at site 10.2 mi upstream at different datum. Mar. 17, 1929, to Nov. 7, 1930, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft, 20.5 mi upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 383 ft³/s, 11.79 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s Aug. 21, 1969, gage height, 32.60 ft; maximum gage height, 33.7 ft Aug. 12, 1928, from floodmarks, present site and datum; minimum discharge, 1.0 ft³/s Sept. 30, Oct. 1, 2, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,990 ft³/s Apr. 25, gage height, 15.04 ft; minimum, 55 ft³/s Aug. 11, 15, 20-21, gage height, 0.68 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	80	195	265	104	396	400	364	364	97	62	64
2	70	84	186	176	152	463	370	353	356	93	64	62
3	68	78	154	138	496	423	798	231	179	90	61	60
4	66	78	126	134	468	415	1960	307	126	87	60	62
5	66	94	126	138	411	239	1840	360	163	104	60	62
6	75	88	138	354	400	176	1290	350	181	305	61	60
7	69	86	132	183	404	325	396	231	186	364	64	58
8	66	80	102	158	419	635	419	148	260	156	62	60
9	66	75	91	152	400	1710	427	115	191	87	59	58
10	67	74	90	152	316	1650	1910	112	138	81	57	58
11	70	70	90	315	307	1520	2400	108	105	78	59	61
12	72	72	142	325	307	477	2060	128	99	74	76	62
13	74	193	374	119	310	381	1930	130	96	72	66	70
14	81	181	356	96	310	350	1400	130	93	69	60	72
15	79	124	292	94	310	169	636	179	91	68	57	65
16	76	102	362	310	334	128	4730	666	88	67	57	62
17	74	91	600	217	404	123	4140	2100	90	66	58	66
18	72	86	496	104	570	328	2720	1840	87	65	62	67
19	70	87	427	87	605	802	1470	1660	360	65	60	66
20	68	87	408	90	531	1660	1420	925	384	76	57	66
21	68	87	396	91	482	1930	575	353	419	83	56	70
22	67	86	381	90	454	1690	364	591	740	75	59	73
23	66	86	192	234	975	501	364	1320	396	70	61	67
24	66	86	353	388	1740	381	2120	730	347	65	68	64
25	91	84	374	179	574	360	5630	506	295	65	68	62
26	174	81	374	124	411	328	4020	440	124	62	68	61
27	117	83	367	114	392	217	2250	560	88	60	67	61
28	96	87	144	110	378	1520	1400	454	88	60	67	60
29	81	148	244	107	---	1790	432	381	97	65	66	59
30	75	210	341	105	---	1600	370	396	105	62	65	65
31	74	---	334	105	---	1380	---	384	---	60	62	---
TOTAL	2397	2948	8387	5254	12964	24067	50241	16552	6336	2891	1929	1903
MEAN	77.3	98.3	271	169	463	776	1675	534	211	93.3	62.2	63.4
MAX	174	210	600	388	1740	1930	5630	2100	740	364	76	73
MIN	66	70	90	87	104	123	364	108	87	60	56	58
CFSM	.18	.22	.62	.38	1.05	1.76	3.80	1.21	.48	.21	.14	.14
IN.	.20	.25	.71	.44	1.09	2.03	4.24	1.40	.53	.24	.16	.16

CAL YR 1982 TOTAL 99530 MEAN 273 MAX 4240 MIN 60 CFSM .62 IN 8.40
WTR YR 1983 TOTAL 135869 MEAN 372 MAX 5630 MIN 56 CFSM .84 IN 11.46

01671020 NORTH ANNA RIVER AT HART CORNER NEAR DOSWELL, VA

LOCATION.--Lat 37°51'00", long 77°25'41", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 30, 0.3 mi west of Hart Corner, 2.1 mi east of Doswell, and 5.4 mi upstream from confluence with South Anna River.

DRAINAGE AREA.--463 mi².

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 43 ft, from topographic map.

REMARKS.--Records good. Flow regulated since January 1972 by Lake Anna, capacity, 373,000 acre-ft, 27.7 mi upstream. About 3.0 ft³/s diverted since June 1975, by Hanover County Department of Public Utilities, 0.8 mi upstream. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7,800 ft³/s Oct. 3, 1979; minimum discharge, 44 ft³/s Sept. 28, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,820 ft³/s Apr. 26, gage height, 17.22 ft; minimum, 50 ft³/s Aug. 21, gage height, 2.63 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	85	246	344	123	481	605	539	453	100	56	55
2	76	94	232	225	145	591	477	496	438	98	58	57
3	72	90	200	168	541	535	816	400	274	96	57	55
4	71	83	161	161	585	509	1980	430	169	91	56	55
5	68	104	154	165	515	331	1970	458	181	107	56	58
6	78	104	165	395	486	214	1580	443	213	264	58	55
7	74	94	171	251	494	350	551	327	208	401	60	54
8	71	90	128	192	521	613	539	224	325	219	62	55
9	71	84	119	179	498	1760	535	160	238	84	60	54
10	70	84	109	179	401	1830	1760	154	187	81	59	53
11	72	80	114	315	370	1630	2880	149	132	77	57	55
12	76	82	139	433	370	704	2540	157	122	74	75	56
13	77	211	424	181	372	477	2200	166	116	72	65	62
14	89	254	448	122	372	434	1720	163	112	70	56	68
15	85	165	412	117	382	249	681	187	111	68	52	60
16	80	132	498	288	426	150	4110	510	100	66	53	56
17	77	114	794	285	527	136	4900	2120	100	64	52	59
18	74	105	675	147	705	281	3420	2020	98	63	56	61
19	72	102	559	108	777	880	1890	1690	339	58	55	60
20	72	104	521	117	703	1490	1520	1060	447	64	53	59
21	72	102	502	109	631	2010	849	489	464	77	51	65
22	71	101	481	106	587	1990	529	641	742	72	53	69
23	70	101	300	238	829	785	505	1810	481	66	54	63
24	68	100	346	500	1780	495	1800	1260	390	61	60	60
25	112	96	458	272	904	449	5000	735	336	59	61	58
26	197	96	458	156	521	418	4840	573	175	57	61	56
27	148	96	450	142	481	291	3120	641	99	56	60	58
28	113	100	231	131	458	1420	2060	573	98	54	60	58
29	94	171	237	128	---	2080	685	481	112	58	60	55
30	84	244	424	126	---	1800	549	501	115	58	58	61
31	83	---	407	125	---	1540	---	491	---	56	56	---
TOTAL	2615	3468	10563	6405	15504	26923	56611	20048	7375	2891	1790	1750
MEAN	84.4	116	341	207	554	868	1887	647	246	93.3	57.7	58.3
MAX	197	254	794	500	1780	2080	5000	2120	742	401	75	69
MIN	68	80	109	106	123	136	477	149	98	54	51	53
CFSM	.18	.25	.74	.45	1.20	1.87	4.08	1.40	.53	.20	.13	.13
IN.	.21	.28	.85	.51	1.25	2.16	4.55	1.61	.59	.23	.14	.14

CAL YR 1982 TOTAL 113974 MEAN 312 MAX 3650 MIN 60 CFSM .67 IN 9.16
WTR YR 1983 TOTAL 155943 MEAN 427 MAX 5000 MIN 51 CFSM .92 IN 12.53

01671100 LITTLE RIVER NEAR DOSWELL, VA

LOCATION.--Lat 37°52'21", long 77°30'48", Hanover County, Hydrologic Unit 02080106, on left bank at downstream side of bridge on State Highway 685, 0.8 mi southwest of Verdon, 2.9 mi west of Doswell, and 9.6 mi upstream from mouth.

DRAINAGE AREA.--107 mi².

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 132.30 ft National Geodetic Vertical Datum of 1929 (levels by La Prade Bros., Engineers).

REMARKS.--Records good. Frequent quarry dewatering by the General Crushed Stone Co. above gage adds about 0.5 ft³/s at times. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 97.6 ft³/s, 12.39 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s Aug. 21, 1969, gage height, 11.09 ft, from rating curve extended above 7,600 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 0.10 ft³/s Sept. 25, 26, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 9	0730	1200	5.19	Apr. 25	1700	1280	5.29
Apr. 11	1330	820	4.65	May 24	0300	1010	4.94
Apr. 17	0200	*1360	5.38				

Minimum discharge, 0.42 ft³/s Sept. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	25	113	66	56	102	153	122	96	45	4.8	.66
2	17	23	109	64	59	136	138	113	88	44	4.2	.85
3	15	20	99	60	124	163	203	106	80	42	4.1	.79
4	12	21	88	56	166	137	244	102	75	37	3.6	.92
5	10	29	74	55	128	111	205	101	74	48	3.5	.92
6	12	32	71	88	99	97	152	98	72	65	3.3	.76
7	16	36	81	120	93	97	140	88	68	49	3.3	.54
8	15	33	78	103	96	271	147	78	75	44	3.0	.53
9	14	29	64	83	99	992	157	73	73	44	2.6	.58
10	12	26	54	73	96	361	438	68	74	41	2.5	.62
11	11	25	50	71	82	216	780	65	67	33	2.4	.64
12	10	24	55	73	70	158	543	62	58	29	3.7	.57
13	10	81	65	74	74	126	262	62	51	25	5.4	.54
14	15	127	69	70	80	109	184	59	46	22	4.2	.51
15	17	124	65	64	90	97	256	57	41	21	4.0	.63
16	21	82	122	61	112	90	968	96	37	18	5.2	.98
17	21	59	214	58	151	84	1140	317	34	17	6.9	1.0
18	18	47	219	55	223	115	457	395	33	16	5.2	.98
19	18	39	142	38	276	321	238	232	81	15	4.2	.84
20	15	36	117	35	261	384	176	148	53	15	3.6	.72
21	14	35	104	39	195	321	148	138	120	14	2.9	.75
22	13	34	92	42	155	347	131	261	222	13	2.3	1.1
23	12	33	79	71	140	263	122	824	153	11	1.9	1.1
24	12	31	71	102	153	172	475	907	98	10	1.9	1.1
25	23	30	65	108	146	136	1110	415	75	9.6	1.9	1.0
26	55	27	62	94	134	119	832	185	58	8.8	1.8	.98
27	76	27	60	80	119	120	306	139	48	8.2	1.6	.94
28	67	29	59	71	105	416	194	115	41	7.5	1.2	.94
29	50	63	60	64	---	581	156	105	48	7.1	1.1	.87
30	37	100	66	61	---	309	135	104	49	6.4	1.0	1.1
31	29	---	67	59	---	182	---	102	---	5.7	.87	---
TOTAL	686	1327	2734	2158	3582	7133	10590	5737	2188	771.3	98.17	24.46
MEAN	22.1	44.2	88.2	69.6	128	230	353	185	72.9	24.9	3.17	.82
MAX	76	127	219	120	276	992	1140	907	222	65	6.9	1.1
MIN	10	20	50	35	56	84	122	57	33	5.7	.87	.51
CFSM	.21	.41	.82	.65	1.20	2.15	3.30	1.73	.68	.23	.03	.008
IN.	.24	.46	.95	.75	1.25	2.48	3.68	1.99	.76	.27	.03	.01

CAL YR 1982 TOTAL 24826.20 MEAN 68.0 MAX 1340 MIN 1.3 CFSM .64 IN 8.63
WTR YR 1983 TOTAL 37028.93 MEAN 101 MAX 1140 MIN .51 CFSM .94 IN 12.87

01672500 SOUTH ANNA RIVER NEAR ASHLAND, VA

LOCATION.--Lat 37°47'48", long 77°32'57", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 54, 4.5 mi northwest of Ashland, and 7.6 mi upstream from Newfound River.

DRAINAGE AREA.--394 mi^2.

PERIOD OF RECORD.--October 1930 to current year.

REVISED RECORDS.--WSP 801: 1935(M). WSP 1502: 1935, 1939. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 83.74 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since 1966, diversion 150 ft above station for town of Ashland water supply has averaged less than 0.6 ft^3/s. Capacity of the diversion pickup is about 1.5 ft^3/s. Small diurnal fluctuation at low flow in some years caused by gristmills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--53 years, 363 ft^3/s, 12.51 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft^3/s Aug. 23, 1969, gage height, 24.99 ft; minimum, 0.10 ft^3/s Sept. 12, 1966, caused by diversion above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 15, 1928, reached a stage of about 24 ft, discharge, about 14,500 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 11	1500	2320	8.76	Apr. 27	1800	3030	10.32
Apr. 16	0100	*3100	10.47	May 23	1030	2810	9.85

Minimum discharge, 1.0 ft^3/s Sept. 10, gage height, 0.85 ft, due to unknown diversion above gage; minimum daily, 3.9 ft^3/s Sept. 10, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	74	577	199	168	407	548	436	347	156	29	12
2	60	72	388	177	219	566	496	386	316	130	28	15
3	51	68	423	168	481	516	774	352	289	117	27	12
4	45	67	318	158	726	415	1520	346	288	109	27	11
5	44	94	248	167	504	340	1290	329	303	100	25	10
6	42	118	287	282	346	311	640	303	231	138	25	9.5
7	39	171	271	274	311	347	555	269	248	137	26	8.8
8	40	125	199	218	336	515	613	257	383	129	26	7.3
9	42	100	167	189	334	713	722	273	256	114	28	5.8
10	44	88	146	181	318	873	1540	251	204	101	26	3.9
11	44	81	140	194	288	678	2290	240	174	94	36	4.2
12	52	77	172	216	248	523	2070	232	163	78	51	4.0
13	55	264	194	230	316	411	1060	224	145	72	46	3.9
14	65	320	223	197	344	341	723	217	134	66	38	5.4
15	72	288	218	179	328	302	1090	213	124	82	34	7.6
16	84	190	779	173	384	277	2840	309	116	88	39	7.5
17	74	141	963	167	612	257	2630	1070	110	69	36	7.4
18	66	123	977	158	903	391	2600	1080	118	55	37	8.5
19	57	119	525	135	1120	755	1690	562	118	49	32	7.5
20	51	107	364	121	996	1120	697	432	307	44	27	6.7
21	49	94	300	147	821	1060	554	395	335	41	26	8.9
22	46	92	262	142	668	1250	471	1200	921	40	25	13
23	44	90	240	242	657	887	418	2700	591	38	22	13
24	43	89	211	278	663	556	1530	1430	324	38	21	9.0
25	92	87	195	329	610	431	2340	656	226	37	19	7.9
26	155	84	185	283	536	361	2490	509	176	36	15	9.1
27	181	83	179	234	485	474	2920	474	144	35	14	10
28	212	89	177	205	400	1520	1740	474	139	34	14	9.6
29	134	175	191	187	---	1920	670	401	134	32	14	9.9
30	99	415	209	177	---	1220	524	389	162	31	13	19
31	83	---	207	175	---	662	---	392	---	30	11	---
TOTAL	2238	3985	9935	6182	14122	20399	40045	16801	7526	2320	837	267.4
MEAN	72.2	133	320	199	504	658	1335	542	251	74.8	27.0	8.91
MAX	212	415	977	329	1120	1920	2920	2700	921	156	51	19
MIN	39	67	140	121	168	257	418	213	110	30	11	3.9
CFSM	.18	.34	.81	.51	1.28	1.67	3.39	1.38	.64	.19	.07	.02
IN.	.21	.38	.94	.58	1.33	1.93	3.78	1.59	.71	.22	.08	.03

CAL YR 1982 TOTAL 106705.0 MEAN 292 MAX 2550 MIN 21 CFSM .74 IN 10.07
WTR YR 1983 TOTAL 124657.4 MEAN 342 MAX 2920 MIN 3.9 CFSM .87 IN 11.77

01673000 PAMUNKEY RIVER NEAR HANOVER, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°46'03", long 77°19'57", Hanover County, Hydrologic Unit 02080106, on right bank 100 ft downstream from bridge on State Highway 614, 0.3 mi upstream from Mechumps Creek, 2.0 mi east of Hanover, and 7.0 mi upstream from Millpond Creek.

DRAINAGE AREA.--1,081 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1302: 1944(M). WSP 1382: 1949. WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.72 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 15, 1976, nonrecording gage at same site and datum, and since June 11, 1957, auxiliary nonrecording gage 1.2 mi downstream from base gage.

REMARKS.--Records good except those for period of no gage-height record, Dec. 13 to Jan. 17, which are fair. Some regulation since January 1972 by Lake Anna, capacity, 373,000 acre-ft and occasional diurnal fluctuation at low flow caused by mill above station. Unknown amount of diversion for irrigation above gage.

AVERAGE DISCHARGE.--42 years, 993 ft^3/s, 12.47 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,300 ft^3/s Aug. 23, 1969, gage height, 31.12 ft, from floodmarks, from rating curve extended above 22,000 ft^3/s; minimum, 12 ft^3/s Sept. 12, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1928 reached a stage of 32.6 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,420 ft^3/s Apr. 18, gage height, 20.49 ft; minimum, 67 ft^3/s Aug. 5, Sept. 8-9, gage height, 2.41 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	212	215	1090	610	454	1180	2670	1460	1120	402	86	76
2	174	205	1100	540	460	1610	1530	1270	1030	362	109	73
3	152	202	889	490	966	1610	2010	1130	925	317	96	75
4	141	194	823	470	1580	1440	3210	1010	702	284	78	74
5	131	196	656	620	1580	1190	4200	1120	671	261	75	74
6	129	255	620	880	1210	897	3960	1060	673	326	118	75
7	136	295	736	900	1090	922	2290	956	624	660	88	72
8	132	337	603	790	1130	1250	1650	777	899	606	92	70
9	126	282	485	680	1130	2510	1710	672	894	351	106	71
10	126	242	419	600	1060	3740	2680	627	675	264	101	75
11	126	221	388	720	958	3460	4600	588	542	240	97	72
12	127	210	428	810	873	2480	5800	560	455	219	107	73
13	138	382	515	750	893	1390	6150	557	412	189	100	77
14	160	905	590	600	979	1160	5270	538	373	176	115	79
15	175	852	740	490	1040	983	3400	526	346	167	108	75
16	181	685	1060	460	1140	735	4710	664	319	171	97	73
17	185	480	1540	620	1450	663	7250	2560	300	174	98	76
18	176	377	2040	532	2150	785	8300	3910	282	151	95	79
19	165	334	1990	380	2650	2050	7570	3690	345	140	100	78
20	155	316	1440	311	2650	2840	6090	2750	749	139	95	77
21	148	293	1000	350	2250	3840	3920	1440	912	123	87	80
22	140	270	780	380	1880	4200	1860	1480	1600	145	81	85
23	134	265	740	558	1700	3830	1390	4250	1840	129	82	84
24	130	258	850	1020	2700	2070	2510	5340	1150	110	83	78
25	152	247	870	1030	2720	1400	4750	4660	829	111	86	75
26	446	241	760	794	1640	1190	7200	2320	634	117	87	72
27	510	238	600	650	1390	1050	8010	1530	387	103	85	72
28	479	243	490	563	1260	2810	7310	1430	315	102	83	76
29	425	362	620	506	---	4350	5510	1260	355	103	82	77
30	309	668	730	475	---	4840	2630	1190	433	98	82	96
31	246	---	710	466	---	4300	---	1230	---	80	79	---
TOTAL	6166	10270	26302	19045	40983	66775	130140	52555	20791	6820	2878	2289
MEAN	199	342	848	614	1464	2154	4338	1695	693	220	92.8	76.3
MAX	510	905	2040	1030	2720	4840	8300	5340	1840	660	118	96
MIN	126	194	388	311	454	663	1390	526	282	80	75	70
CFSM	.18	.32	.78	.57	1.35	1.99	4.01	1.57	.64	.20	.09	.07
IN.	.21	.35	.91	.66	1.41	2.30	4.48	1.81	.72	.23	.10	.08

CAL YR 1982 TOTAL 309268 MEAN 847 MAX 6540 MIN 96 CFSM .78 IN 10.64
WTR YR 1983 TOTAL 385014 MEAN 1055 MAX 8300 MIN 70 CFSM .98 IN 13.25

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to January 1976.
WATER TEMPERATURES: October 1945 to September 1946, April 1968 to January 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV 22...	1000	270	98	6.7	10.5	3.6	10.3	27	50	24
JAN 17...	0830	444	87	6.8	3.0	5.5	12.4	40	130	22
MAR 17...	0815	664	90	6.9	10.5	7.0	9.7	30	36	24
APR 19...	1215	7640	54	6.6	11.0	25	9.4	460	470	16
JUN 09...	1300	884	75	6.8	22.0	12	7.2	250	460	22
AUG 29...	0815	82	170	7.1	25.5	1.0	5.0	33	80	33

DATE	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV 22...	2	5.5	2.5	8.4	2.5	22	17	5.4	<.10	12
JAN 17...	3	5.2	2.3	7.4	2.1	19	15	4.6	<.10	12
MAR 17...	6	5.4	2.5	7.5	1.8	18	16	5.6	<.10	12
APR 19...	5	3.4	1.7	2.9	1.8	11	11	3.4	<.10	7.9
JUN 09...	4	4.9	2.4	5.8	2.0	18	10	4.7	.10	12
AUG 29...	5	8.1	3.1	19	3.0	28	37	6.6	.10	7.1

< Actual value is known to be less than the value shown.

01673000 PAMUNKEY RIVER NEAR HANOVER, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV 22...	74	67	<.10	.080	.40	.040	.010	.010	--	1
JAN 17...	66	60	.25	.010	.30	.040	.040	.010	--	--
MAR 17...	81	62	.26	.060	.20	.050	.020	.020	70	1
APR 19...	57	39	.15	.020	.50	.060	.020	.010	70	1
JUN 09...	75	53	--	--	--	--	--	--	--	--
AUG 29...	109	102	.23	<.010	1.30	.060	.060	.070	<10	1

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV 22...	31	<1	2	<1	<3	9	510	1	<4	60
JAN 17...	--	--	--	--	--	--	--	--	--	--
MAR 17...	36	<1	<1	<1	<3	2	370	8	<4	57
APR 19...	35	<1	<1	2	<3	3	370	5	<4	30
JUN 09...	--	--	--	--	--	--	--	--	--	--
AUG 29...	28	<1	1	<1	3	3	230	1	<4	180

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 22...	<.1	<10	<1	<1	<1	33	<6.0	4	4	95
JAN 17...	--	--	--	--	--	--	--	--	7	93
MAR 17...	.4	<10	2	<1	<1	37	<6.0	12	10	99
APR 19...	.2	<10	1	<1	<1	25	<6.0	9	18	--
JUN 09...	--	--	--	--	--	--	--	--	16	97
AUG 29...	.2	<10	2	<1	<1	50	<6.0	14	1	100

< Actual value is known to be less than the value shown.

01673550 TOTOPOTOMOY CREEK NEAR STUDLEY, VA

LOCATION.--Lat 37°29'44", long 77°15'29", Hanover County, Hydrologic Unit 02080106, on right bank at downstream side of bridge on State Highway 606, 2.0 mi southeast of Studley, 2.4 mi downstream from Hawes millrace, and 4.1 mi upstream from mouth.

DRAINAGE AREA.--26.2 mi^2.

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 38.36 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--6 years, 29.8 ft^3/s, 15.45 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 640 ft^3/s Feb. 25, 1979, gage height, 8.77 ft, from rating curve extended above 300 ft^3/s; minimum daily, 0.35 ft^3/s Oct. 1-7, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 160 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 21	2130	331	7.21	May 22	1800	164	5.78
Apr. 16	Unknown	*350	a7.3				

a About.

Minimum discharge, 0.66 ft^3/s Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	16	35	33	24	44	53	36	22	27	3.2	2.3
2	10	16	33	29	29	67	48	34	23	19	3.2	2.1
3	8.7	16	31	27	39	57	63	33	22	17	3.3	2.1
4	8.2	32	26	26	36	42	69	42	20	27	3.2	2.0
5	10	69	24	26	28	36	54	38	18	26	3.2	2.1
6	11	40	25	28	27	34	47	32	17	18	4.1	1.8
7	9.8	24	24	27	31	38	50	29	17	16	4.8	1.3
8	8.6	19	25	25	35	50	51	28	44	14	4.4	1.3
9	8.4	17	24	24	33	56	47	27	50	12	4.6	1.1
10	8.4	15	21	27	29	44	73	25	24	12	4.6	1.0
11	8.2	14	22	30	29	39	74	24	21	11	4.1	.90
12	8.7	14	36	29	36	36	81	24	19	10	4.1	.78
13	12	23	33	27	38	31	52	23	18	9.2	3.9	.72
14	18	37	31	25	36	29	42	22	16	9.2	3.8	1.9
15	18	44	31	24	43	27	88	22	15	8.8	3.3	2.5
16	18	33	77	23	53	25	314	25	14	8.0	3.0	2.5
17	14	25	119	21	67	24	223	30	13	7.5	2.9	2.6
18	12	22	71	20	84	50	103	27	12	6.9	2.9	2.6
19	12	20	48	19	79	95	79	23	12	6.6	2.9	2.3
20	11	19	44	18	65	75	67	27	17	6.2	3.0	2.0
21	11	18	38	19	54	246	59	31	57	5.8	2.8	3.2
22	13	18	32	21	47	209	54	63	61	5.7	2.5	9.2
23	13	18	29	40	49	93	51	90	31	5.1	2.8	9.8
24	11	17	31	59	50	66	87	50	21	5.7	2.8	11
25	23	16	26	38	46	55	126	46	18	5.5	2.6	7.7
26	36	16	25	29	41	49	80	42	16	5.3	1.8	5.1
27	33	16	24	26	36	59	59	37	15	5.0	1.9	4.1
28	24	18	25	24	34	115	51	31	14	4.4	1.8	3.8
29	19	28	31	23	---	108	44	25	26	3.9	2.0	3.6
30	17	32	42	23	---	66	39	24	35	3.6	2.1	9.2
31	16	---	42	23	---	55	---	23	---	3.3	1.9	---
TOTAL	443.0	712	1125	833	1198	2020	2328	1033	708	324.7	97.5	102.60
MEAN	14.3	23.7	36.3	26.9	42.8	65.2	77.6	33.3	23.6	10.5	3.15	3.42
MAX	36	69	119	59	84	246	314	90	61	27	4.8	11
MIN	8.2	14	21	18	24	24	39	22	12	3.3	1.8	.72
CFSM	.55	.91	1.39	1.03	1.63	2.49	2.96	1.27	.90	.40	.12	.13
IN.	.63	1.01	1.60	1.18	1.70	2.87	3.31	1.47	1.01	.46	.14	.15

CAL YR 1982 TOTAL 8344.80 MEAN 22.9 MAX 163 MIN 3.5 CFSM .87 IN 11.85
WTR YR 1983 TOTAL 10924.80 MEAN 29.9 MAX 314 MIN .72 CFSM 1.14 IN 15.51

01673800 PO RIVER NEAR SPOTSYLVANIA, VA

LOCATION.--Lat 38°10'17", long 77°35'42", Spotsylvania County, Hydrologic Unit 02080105, on right bank at upstream side of bridge on State Highway 208, 1.6 mi north of Snell, 2.0 mi south of Spotsylvania, 4.8 mi downstream from Gladys Run, and 4.9 mi upstream from U.S. Highway 1.

DRAINAGE AREA.--77.4 mi^2.

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 183.76 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1964, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, Nov. 23 to Jan. 3, which are fair. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 75.2 ft^3/s, 13.19 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft^3/s June 22, 1972, gage height, 19.03 ft, from rating curve extended above 3,400 ft^3/s; minimum daily, 0.10 ft^3/s Oct. 24-29, 1963, Sept. 6-13, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 8	2400	908	7.46	Apr. 16	1800	*2930	12.18
Mar. 28	2400	971	7.67	Apr. 25	1100	2460	11.40
Apr. 11	0900	1120	8.14				

Minimum discharge, 0.52 ft^3/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	14	120	40	42	76	116	87	58	19	2.5	.88
2	10	13	140	38	59	137	102	79	50	19	2.2	.85
3	8.6	13	120	35	229	117	354	73	44	17	2.0	.81
4	7.5	13	80	35	152	85	372	70	47	23	2.0	.76
5	7.1	20	70	34	94	72	157	65	83	56	1.8	.76
6	6.9	32	64	37	74	65	124	58	74	63	1.6	.71
7	6.7	31	70	39	76	88	140	53	48	57	1.7	1.2
8	6.8	23	50	39	94	631	184	49	42	31	1.7	.95
9	6.9	20	42	36	95	667	167	47	37	20	1.8	.70
10	6.8	19	39	40	85	300	546	45	32	16	2.0	.61
11	6.5	18	38	75	90	198	939	41	28	12	3.1	.59
12	6.5	18	50	81	88	143	359	38	23	10	2.6	.86
13	8.6	67	68	59	90	111	184	35	22	8.8	1.9	1.4
14	14	74	60	49	90	92	141	33	20	7.9	4.0	1.4
15	15	46	54	45	90	81	325	44	20	7.3	3.6	1.3
16	14	31	70	43	95	72	2020	275	19	6.6	2.7	1.2
17	12	25	150	41	110	65	1250	706	16	5.9	2.1	1.1
18	9.6	23	160	38	130	140	259	207	18	23	1.8	1.4
19	9.1	22	100	33	160	513	173	98	26	17	1.8	1.1
20	8.6	21	80	28	190	327	138	85	24	14	1.7	.82
21	8.3	21	70	27	160	288	114	88	44	11	1.6	.87
22	7.5	22	60	27	140	525	100	237	50	8.6	2.1	1.1
23	7.6	20	56	66	120	188	83	285	42	7.2	1.4	.97
24	7.9	19	50	109	110	130	582	133	29	6.3	1.1	.88
25	27	19	48	87	105	105	1970	89	22	5.5	.96	.88
26	99	18	44	67	91	89	500	71	17	4.9	.94	.88
27	74	18	42	57	76	128	182	81	15	4.5	2.0	.87
28	38	19	40	51	67	632	136	73	13	4.2	1.1	.76
29	24	30	39	47	---	539	111	74	15	4.2	.84	.76
30	19	100	42	45	---	177	96	84	18	3.4	.92	1.1
31	16	---	45	43	---	131	---	73	---	2.8	.88	---
TOTAL	512.5	829	2161	1491	3002	6912	11924	3476	996	496.1	58.44	28.47
MEAN	16.5	27.6	69.7	48.1	107	223	397	112	33.2	16.0	1.89	.95
MAX	99	100	160	109	229	667	2020	706	83	63	4.0	1.4
MIN	6.5	13	38	27	42	65	83	33	13	2.8	.84	.59
CFSM	.21	.36	.90	.62	1.38	2.88	5.13	1.45	.43	.21	.02	.01
IN.	.25	.40	1.04	.72	1.44	3.32	5.73	1.67	.48	.24	.03	.01

CAL YR 1982 TOTAL 21720.50 MEAN 59.5 MAX 964 MIN 3.6 CFSM .77 IN 10.44
WTR YR 1983 TOTAL 31886.51 MEAN 87.4 MAX 2020 MIN .59 CFSM 1.13 IN 15.33

01674000 MATTAPONI RIVER NEAR BOWLING GREEN, VA

LOCATION.--Lat 38°03'42", long 77°23'10", Caroline County, Hydrologic Unit 02080105, on right bank 0.1 mi upstream from bridge on State Highway 605, 2.2 mi northwest of Bowling Green, 2.4 mi upstream from South River, and 7.1 mi downstream from confluence of Matta and Poni Rivers.

DRAINAGE AREA.--257 mi^2.

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WSP 1382: 1943, 1945(M), 1948(M), 1949, 1953(M). WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 85.14 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 17, 1978, gage located on left bank at same datum.

REMARKS.--Records good. Some diurnal fluctuation from gristmill upstream on Po River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--41 years, 238 ft^3/s, 12.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s June 23, 1972, gage height, 18.95 ft, from high-water mark in well, from rating curve extended above 8,100 ft^3/s; no flow at times in September and October 1954 and September 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1928 reached a stage of 19.5 ft based on relative difference in stage between this flood and flood of Oct. 17, 1942, at Milford 4 mi downstream, discharge, 15,000 ft^3/s, from rating curve extended above 8,100 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 12	1100	2290	10.16	Apr. 26	1300	3550	11.65
Apr. 17	2100	*4590	12.69				

Minimum discharge, 1.1 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	51	444	178	142	263	593	398	286	86	7.1	2.9
2	41	44	513	164	146	340	456	339	246	81	6.6	3.1
3	32	39	452	152	238	417	492	300	220	73	6.0	3.3
4	25	39	400	143	335	417	579	279	197	62	6.0	2.7
5	23	80	300	142	381	340	788	258	196	63	7.1	3.2
6	22	119	250	210	316	279	690	236	196	162	13	2.6
7	22	114	260	206	263	267	513	217	196	170	10	2.1
8	19	92	230	182	265	293	471	203	190	130	7.1	1.7
9	18	75	187	163	270	463	497	192	173	90	6.2	1.4
10	17	64	155	155	263	1180	670	179	155	64	6.2	1.3
11	16	57	142	188	245	1230	1390	170	135	48	7.1	1.2
12	17	52	181	211	205	840	2210	164	121	37	8.8	1.2
13	19	132	224	209	225	589	1570	157	105	30	8.0	2.1
14	32	265	215	190	281	437	921	148	95	26	7.1	4.8
15	53	239	198	170	283	340	685	143	90	23	6.2	6.4
16	32	187	247	160	297	284	1250	236	79	20	5.3	4.1
17	27	142	374	148	357	250	3920	537	76	18	5.3	3.1
18	26	115	495	137	449	267	3620	1380	69	16	5.5	2.6
19	24	100	579	113	555	430	1570	1330	88	26	5.0	4.2
20	22	92	441	112	652	700	882	678	110	37	4.5	3.8
21	22	86	318	110	650	1070	622	434	132	32	4.1	3.5
22	20	81	262	100	555	935	492	442	322	29	3.5	3.5
23	19	78	229	175	480	1010	415	735	476	24	3.1	4.4
24	19	75	204	266	447	918	539	1430	267	23	2.9	3.8
25	29	67	186	276	415	595	1470	1120	150	19	2.9	3.2
26	176	65	174	258	373	429	3350	587	107	16	3.1	2.6
27	222	64	164	221	327	357	2130	422	83	14	2.8	2.5
28	191	66	158	191	281	476	998	405	69	14	2.7	2.5
29	133	158	162	170	---	788	637	352	75	11	3.5	2.2
30	87	308	192	158	---	1360	485	328	97	9.7	2.9	2.9
31	65	---	193	150	---	956	---	323	---	8.3	2.6	---
TOTAL	1526	3146	8529	5408	9696	18520	34905	14122	4801	1462.0	172.2	88.9
MEAN	49.2	105	275	174	346	597	1164	456	160	47.2	5.55	2.96
MAX	222	308	579	276	652	1360	3920	1430	476	170	13	6.4
MIN	16	39	142	100	142	250	415	143	69	8.3	2.6	1.2
CFSM	.19	.41	1.07	.68	1.35	2.32	4.53	1.77	.62	.18	.02	.01
IN.	.22	.46	1.23	.78	1.40	2.68	5.05	2.04	.69	.21	.02	.01

CAL YR 1982 TOTAL 68106.4 MEAN 187 MAX 1220 MIN 8.4 CFSM .73 IN 9.86
WTR YR 1983 TOTAL 102376.1 MEAN 280 MAX 3920 MIN 1.2 CFSM 1.09 IN 14.82

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°53'16", long 77°09'48", King and Queen County, Hydrologic Unit 02080105, on left bank 0.4 mi upstream from bridge on State Highway 628, 2.4 mi north of Beulahville, and 2.7 mi downstream from Maracossic Creek.

DRAINAGE AREA.--601 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1941 to current year.

REVISED RECORDS.--WSP 2103: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 12.43 ft National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Oct. 14, 1942, nonrecording gage, and Oct. 14, 1942, to Aug. 8, 1974, water-stage recorder at site 80 ft upstream at same datum.

REMARKS.--Records good. Diurnal fluctuation at times during low flow caused by gristmill on Po River.

AVERAGE DISCHARGE.--42 years, 589 ft^3/s, 13.31 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft^3/s June 25, 1972, gage height, 23.97 ft, from floodmarks; maximum gage height, 24.04 ft Aug. 23, 1969; minimum discharge, 5.9 ft^3/s Sept. 14, 1966, gage height, 0.94 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,780 ft^3/s Apr. 20, gage height, 16.20 ft; minimum, 12 ft^3/s Sept. 11-13; minimum gage height, 1.64 ft Sept. 12-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	219	200	626	520	390	750	1820	2530	1210	307	47	21
2	156	173	816	478	382	842	1960	1870	945	292	42	29
3	117	150	934	439	458	920	2070	1340	742	256	39	29
4	97	146	935	405	555	966	1950	1040	639	228	41	24
5	96	258	776	383	666	971	1720	913	590	250	42	24
6	163	236	693	404	707	890	1610	795	539	335	40	22
7	148	249	653	480	720	790	1600	689	489	291	43	19
8	118	261	576	560	694	765	1630	625	578	303	55	19
9	92	237	510	510	659	788	1590	576	633	265	60	15
10	82	210	422	451	637	859	1520	535	565	218	61	14
11	74	191	370	460	621	991	1680	500	459	183	63	12
12	72	180	411	481	572	1170	1950	469	397	150	87	12
13	77	308	482	499	578	1390	2200	447	357	126	100	14
14	98	490	535	480	613	1570	2620	430	321	113	106	20
15	108	666	540	451	688	1560	3080	413	291	99	85	42
16	115	663	647	421	747	1160	3440	425	271	91	69	44
17	119	504	982	394	852	714	3460	667	244	84	59	36
18	107	386	1170	372	1020	659	3350	1040	216	80	51	33
19	89	321	1190	337	1140	842	3850	1310	202	77	45	35
20	81	282	1170	304	1230	1030	4660	1550	220	80	42	28
21	77	260	1160	302	1290	1250	4420	1850	305	86	37	26
22	74	245	1030	312	1350	1590	3430	2120	374	108	34	57
23	73	234	751	410	1400	1740	2540	2260	487	111	31	78
24	71	229	599	575	1410	1810	2070	2320	772	98	30	60
25	111	214	527	707	1290	1880	1980	2300	954	85	28	50
26	287	203	482	712	1130	1860	2030	2310	632	76	25	46
27	389	200	450	636	986	1750	2230	2450	323	72	24	38
28	463	203	429	557	842	1610	2930	2360	251	66	23	32
29	396	305	432	487	---	1600	3640	1910	241	59	22	30
30	316	449	503	437	---	1640	3300	1480	276	55	21	36
31	247	---	528	407	---	1700	---	1320	---	51	20	---
TOTAL	4732	8653	21329	14371	23627	38057	76330	40844	14523	4695	1472	945
MEAN	153	288	688	464	844	1228	2544	1318	484	151	47.5	31.5
MAX	463	666	1190	712	1410	1880	4660	2530	1210	335	106	78
MIN	71	146	370	302	382	659	1520	413	202	51	20	12
CFSM	.26	.48	1.15	.77	1.40	2.04	4.23	2.19	.81	.25	.08	.05
IN.	.29	.54	1.32	.89	1.46	2.36	4.72	2.53	.90	.29	.09	.06

CAL YR 1982 TOTAL 154213 MEAN 423 MAX 1460 MIN 29 CFSM .70 IN 9.55
WTR YR 1983 TOTAL 249578 MEAN 684 MAX 4660 MIN 12 CFSM 1.14 IN 15.45

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1969, 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV										
22...	1200	246	55	6.8	10.5	3.8	10.2	25	130	14
JAN										
17...	1100	394	54	6.8	3.0	4.5	12.0	66	88	13
MAR										
17...	1100	710	54	6.5	10.5	4.0	10.0	50	44	13
APR										
19...	0930	3700	40	6.2	10.5	15	8.5	89	140	10
JUN										
09...	0945	638	43	6.5	21.0	7.1	6.8	190	2100	13
AUG										
29...	1100	23	62	7.0	24.5	3.0	5.7	130	170	16

DATE	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV										
22...	5	3.0	1.5	3.7	1.7	9.0	11	5.8	<.10	10
JAN										
17...	4	2.9	1.5	4.0	1.3	9.0	11	5.5	<.10	9.9
MAR										
17...	5	2.9	1.5	3.8	1.2	8.0	12	2.0	<.10	7.4
APR										
19...	5	2.3	1.0	2.4	1.3	5.0	13	3.3	<.10	5.6
JUN										
09...	3	3.0	1.4	3.3	1.0	10	5.0	4.1	<.10	8.4
AUG										
29...	3	3.3	1.8	4.7	1.5	13	10	6.6	<.10	6.1

< Actual value is known to be less than the value shown.

01674500 MATTAPONI RIVER NEAR BEULAHVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV										
22...	52	43	<.10	.020	.30	.040	<.010	<.010	--	1
JAN										
17...	49	42	.28	.030	.40	.040	.040	.010	--	--
MAR										
17...	61	36	.13	.010	.30	.030	.010	.040	90	1
APR										
19...	49	33	<.10	--	.50	.050	.020	.010	100	1
JUN										
09...	57	32	.23	.050	.30	.060	.030	.020	--	--
AUG										
29...	40	43	.16	<.010	.20	.050	.020	.010	<10	2

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV										
22...	37	<1	2	<1	<3	6	470	2	<4	65
JAN										
17...	--	--	--	--	--	--	--	--	--	--
MAR										
17...	37	<1	<1	2	<3	1	420	5	<4	65
APR										
19...	33	<1	<1	2	<3	2	570	13	<4	45
JUN										
09...	--	--	--	--	--	--	--	--	--	--
AUG										
29...	36	<1	<1	<1	<3	1	1400	<1	<4	170

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV										
22...	<.1	10	<1	<1	<1	19	<6.0	<4	5	83
JAN										
17...	--	--	--	--	--	--	--	--	3	94
MAR										
17...	.4	<10	2	<1	<1	21	<6.0	8	7	97
APR										
19...	.2	<10	1	<1	<1	16	<6.0	10	13	--
JUN										
09...	--	--	--	--	--	--	--	--	16	94
AUG										
29...	<.1	<10	1	<1	<1	30	<6.0	12	3	68

< Actual value is known to be less than the value shown.

01677000 WARE CREEK NEAR TOANO, VA

LOCATION.--Lat 37°20'17", long 76°47'12", New Kent County, Hydrologic Unit 02080107, on left bank at upstream side of bridge on State Highway 600, 0.8 mi upstream from France Swamp, and 4.9 mi north of Toano.

DRAINAGE AREA.--6.29 mi^2.

PERIOD OF RECORD.--October 1979 to October 1981, March 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 10 ft, from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Aug. 10 to Sept. 30, which are poor. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36 ft^3/s Nov. 3, 1979, gage height, 2.30 ft; no flow at times September 1980 and July to September 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft^3/s Apr. 16, gage height, 1.98 ft; minimum daily discharge, 0.19 ft^3/s Aug 22.

REVISIONS.--The daily discharges, in cubic feet per second, for August and September 1981 have been revised and are given below. These figures supersede those published in the report for 1981.

Aug.	1......	0.00	Aug.	16......	0.00	Sept.	1......	0.15	Sept.	16......	8.0
	2......	.00		17......	.00		2......	.06		17......	6.8
	3......	.03		18......	.00		3......	.03		18......	7.4
	4......	.19		19......	.00		4......	.00		19......	6.0
	5......	.53		20......	.00		5......	.00		20......	2.9
	6......	.36		21......	.30		6......	.00		21......	1.1
	7......	.94		22......	1.3		7......	.04		22......	.40
	8......	1.7		23......	1.0		8......	.30		23......	.20
	9......	1.0		24......	.80		9......	1.5		24......	.30
	10......	.10		25......	.50		10......	.35		25......	.50
	11......	.25		26......	.36		11......	.09		26......	1.0
	12......	.65		27......	.25		12......	.05		27......	.80
	13......	.15		28......	.20		13......	.04		28......	.64
	14......	.00		29......	.42		14......	.09		29......	.50
	15......	.00		30......	.70		15......	1.0		30......	.55
				31......	.32						

MONTH	TOTAL	MEAN	MAX	MEAN*	CFSM*	IN*
August 1981	12.05	0.39	1.7	0.00	0.06	0.07
September 1981	40.79	1.36	8.0	.00	.22	.24
WTR YR 1981	1777.49	4.87	24	.00	.77	10.54

01677000 WARE CREEK NEAR TOANO, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	5.5	9.1	5.9	3.5	8.4	6.3	6.0	4.8	4.1	.38	2.0
2	2.1	6.7	5.9	5.8	6.9	11	5.7	5.8	6.0	3.6	.75	4.5
3	2.1	7.4	4.3	7.3	8.9	6.6	6.5	5.4	5.1	3.2	.93	2.5
4	2.0	5.8	3.7	7.6	5.0	5.2	6.0	7.4	4.9	3.0	.77	1.8
5	1.9	7.7	3.5	7.4	3.8	4.8	5.4	6.1	5.0	3.0	1.0	1.5
6	2.0	7.0	4.8	10	4.6	5.3	5.9	5.2	5.1	2.8	2.3	1.3
7	2.2	5.6	5.9	8.5	6.7	8.7	6.7	4.9	6.0	2.5	1.6	1.1
8	2.2	5.8	4.2	7.3	6.2	8.7	7.5	5.0	11	2.1	.99	.86
9	2.3	6.9	3.6	6.7	4.9	7.3	6.2	4.9	7.8	2.1	.71	.64
10	2.3	7.5	3.3	7.2	4.7	6.2	7.6	4.7	6.0	1.9	.45	.43
11	2.4	8.7	4.2	8.7	7.4	6.0	6.9	4.7	5.2	1.7	.35	.43
12	2.4	11	8.4	8.2	10	6.5	5.6	4.8	4.7	1.7	.66	.21
13	3.5	14	6.4	7.5	7.9	5.8	5.2	4.9	4.5	1.5	1.1	.64
14	7.0	12	4.7	6.9	7.3	4.7	5.1	5.0	4.5	1.8	.70	2.0
15	4.8	13	4.5	7.8	10	4.3	6.3	5.1	4.3	2.0	.43	3.5
16	2.8	12	9.6	8.1	8.5	4.1	20	5.7	4.1	1.5	.34	1.4
17	2.0	9.3	9.9	7.9	8.4	4.0	10	6.4	3.9	1.5	.20	.70
18	1.7	7.7	6.8	7.4	8.8	11	8.4	4.9	4.1	1.3	.24	.52
19	1.8	7.0	6.0	6.7	6.7	18	8.4	4.6	4.2	1.1	.21	.36
20	2.0	6.7	6.1	6.3	5.7	13	7.3	8.7	5.3	.86	.21	.33
21	2.3	6.4	5.7	6.4	5.4	9.0	6.6	7.8	9.7	2.1	.20	.31
22	2.3	6.6	5.4	7.2	5.3	9.9	6.3	6.0	6.5	2.0	.19	1.5
23	2.4	6.9	5.3	12	5.9	8.0	6.6	6.8	4.7	1.2	.20	5.9
24	2.3	7.0	5.5	11	6.3	6.6	12	5.7	4.0	1.2	.27	3.2
25	5.0	6.9	5.8	9.4	5.7	7.3	8.8	4.9	3.6	1.3	.28	1.6
26	6.3	6.7	5.8	7.9	5.5	5.8	6.9	5.0	3.7	1.3	.29	.90
27	4.4	7.2	5.8	6.6	5.1	5.1	6.3	7.8	2.8	1.1	.29	.61
28	3.4	7.8	5.8	5.4	5.2	7.6	6.0	5.4	2.6	.78	.35	.57
29	3.2	12	6.1	4.5	---	9.0	5.8	4.6	3.5	.58	1.1	.54
30	4.1	12	6.8	3.9	---	5.9	5.7	4.6	4.9	.47	2.6	.80
31	4.9	---	6.2	3.6	---	5.9	---	4.7	---	.44	1.1	---
TOTAL	92.3	246.8	179.1	227.1	180.3	229.7	218.0	173.5	152.5	55.73	21.19	42.65
MEAN	2.98	8.23	5.78	7.33	6.44	7.41	7.27	5.60	5.08	1.80	.68	1.42
MAX	7.0	14	9.9	12	10	18	20	8.7	11	4.1	2.6	5.9
MIN	1.7	5.5	3.3	3.6	3.5	4.0	5.1	4.6	2.6	.44	.19	.21
CFSM	.47	1.31	.92	1.17	1.02	1.18	1.16	.89	.81	.29	.11	.23
IN.	.55	1.46	1.06	1.34	1.07	1.36	1.29	1.03	.90	.33	.13	.25

WTR YR 1983 TOTAL 1818.87 MEAN 4.98 MAX 20 MIN .19 CFSM .79 IN 10.76

JAMES RIVER BASIN

02011400 JACKSON RIVER NEAR BACOVA, VA

LOCATION.--Lat 38°02'32", long 79°52'54", Bath County, Hydrologic Unit 02080201, on left bank 0.1 mi downstream from ford, 1.8 mi upstream from Back Creek, and 2.2 mi southwest of Bacova.

DRAINAGE AREA.--158 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,639.20 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--9 years, 170 ft³/s, 14.61 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,970 ft³/s Apr. 5, 1977, gage height, 13.39 ft, from rating curve extended above 1,300 ft³/s on basis of slope-area measurements at gage heights 8.88 ft, 11.40 ft, and 13.88 ft; minimum, 17 ft³/s Sept. 29, 30, Oct. 1, 14, 15, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 11.40 ft, discharge, 4,800 ft³/s, and flood of Dec. 26, 1973, reached a stage of 13.88 ft, discharge, 7,560 ft³/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1215	1780	7.79	Apr. 24	1030	*2690	9.08
Apr. 3	0415	2110	8.28	May 16	1715	1780	7.79

Minimum discharge, 20 ft³/s Sept. 10, 18, 20, gage height, 3.00 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	34	487	89	94	153	231	248	200	67	33	29
2	30	33	475	85	430	143	406	219	177	65	33	26
3	29	32	330	82	847	129	1470	200	160	63	33	25
4	28	54	252	76	498	118	755	200	215	69	32	25
5	28	101	206	71	339	111	530	168	172	69	31	25
6	27	77	227	69	274	112	420	146	150	62	33	24
7	29	62	189	68	233	150	359	133	141	55	31	24
8	28	54	164	67	194	194	337	127	130	52	30	23
9	30	50	146	64	163	424	330	124	118	50	30	23
10	32	46	130	65	152	411	1160	111	108	47	29	23
11	32	43	121	75	145	345	881	105	101	46	31	23
12	31	42	122	71	133	283	616	101	95	45	37	23
13	51	61	102	64	120	233	467	98	90	44	33	24
14	66	59	97	61	113	199	379	97	90	42	30	28
15	49	53	91	63	112	176	708	100	95	41	29	24
16	40	50	1060	61	138	154	835	818	101	41	28	23
17	36	48	725	59	214	139	611	832	159	40	28	23
18	33	46	447	56	293	182	482	474	110	39	28	23
19	31	44	334	50	274	719	393	360	108	39	28	22
20	30	45	266	52	251	482	324	368	98	38	27	22
21	31	48	211	54	236	805	266	731	89	38	26	24
22	30	49	170	56	245	719	224	962	84	58	25	26
23	28	52	150	91	305	505	229	668	79	52	25	24
24	28	53	143	162	317	391	2250	484	73	69	25	22
25	52	52	133	128	269	319	1290	369	69	51	26	22
26	76	49	125	114	214	254	756	309	65	45	25	22
27	55	48	118	107	178	264	540	250	62	39	25	22
28	45	96	113	102	162	398	422	210	60	37	27	22
29	41	858	111	96	---	316	342	223	66	35	30	22
30	38	454	101	97	---	268	288	313	74	34	25	25
31	36	---	94	99	---	252	---	235	---	33	25	---
TOTAL	1152	2793	7440	2454	6943	9348	18301	9783	3339	1505	898	713
MEAN	37.2	93.1	240	79.2	248	302	610	316	111	48.5	29.0	23.8
MAX	76	858	1060	162	847	805	2250	962	215	69	37	29
MIN	27	32	91	50	94	111	224	97	60	33	25	22
CFSM	.24	.59	1.52	.50	1.57	1.91	3.86	2.00	.70	.31	.18	.15
IN.	.27	.66	1.75	.58	1.63	2.20	4.31	2.30	.79	.35	.21	.17

CAL YR 1982 TOTAL 72168 MEAN 198 MAX 2960 MIN 24 CFSM 1.25 IN 16.99
WTR YR 1983 TOTAL 64669 MEAN 177 MAX 2250 MIN 22 CFSM 1.12 IN 15.23

02011400 JACKSON RIVER NEAR BACOVA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: March 1978 to September 1981, October 1982 to September 1983.

INSTRUMENTATION.--Temperature recorder since March 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum recorded, 29.5°C July 21, 1980; minimum recorded, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 29.0°C July 21, Aug. 21.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.5	15.0	15.5	12.0	11.5	12.0	9.0	9.0	9.0	7.5	7.5	7.5
2	16.0	15.5	15.5	12.5	12.0	12.0	9.5	9.0	9.5	7.5	7.0	7.5
3	17.0	16.0	16.5	12.5	12.0	12.5	10.0	9.5	9.5	7.5	7.0	7.5
4	17.5	16.5	17.0	12.5	12.0	12.5	10.5	10.0	10.0	7.0	6.5	6.5
5	17.5	16.5	17.0	12.0	10.5	11.5	10.5	10.5	10.5	6.5	6.0	6.0
6	18.0	16.5	17.5	10.5	9.5	10.0	10.5	10.5	10.5	6.0	6.0	6.0
7	18.0	17.0	17.5	9.5	9.0	9.0	11.0	10.0	10.5	6.0	6.0	6.0
8	18.0	17.0	17.5	9.0	9.0	9.0	10.0	9.0	9.5	6.0	6.0	6.0
9	17.5	17.0	17.0	9.0	9.0	9.0	9.0	8.0	8.5	6.0	6.0	6.0
10	17.0	16.0	16.5	9.5	9.0	9.5	8.0	7.0	7.5	6.5	6.0	6.0
11	16.0	16.0	16.0	9.5	9.5	9.5	7.5	7.0	7.0	7.0	6.5	6.5
12	16.5	15.5	16.0	10.5	9.5	10.0	7.5	6.0	6.5	6.5	6.0	6.5
13	16.0	15.5	16.0	10.5	9.5	10.0	6.0	4.5	5.0	6.0	5.5	6.0
14	15.5	15.0	15.5	9.5	9.0	9.0	4.5	4.5	4.5	6.0	5.5	5.5
15	15.0	14.5	15.0	9.0	8.5	8.5	4.5	4.0	4.5	6.0	5.5	5.5
16	15.0	14.0	14.5	8.5	7.5	8.0	6.0	4.5	5.0	5.5	5.0	5.0
17	14.0	13.0	13.5	7.5	7.5	7.5	6.5	6.0	6.0	5.0	2.0	4.0
18	13.0	12.5	13.0	8.5	7.5	8.0	7.0	6.5	7.0	---	---	---
19	13.0	12.5	13.0	8.5	8.5	8.5	7.5	7.0	7.0	---	---	---
20	13.5	12.0	13.0	9.0	8.5	9.0	7.5	7.5	7.5	---	---	---
21	13.5	12.5	13.0	9.5	9.0	9.0	7.5	7.0	7.5	---	---	---
22	13.0	12.5	13.0	10.0	9.5	9.5	7.0	6.5	6.5	---	---	---
23	12.5	12.0	12.0	10.5	10.0	10.5	7.0	6.5	7.0	---	---	---
24	12.0	11.5	12.0	10.5	10.0	10.5	7.5	6.5	7.0	---	---	---
25	11.5	11.0	11.5	10.0	9.0	9.0	8.0	7.5	8.0	---	---	---
26	11.0	10.5	11.0	9.0	8.5	8.5	8.5	8.0	8.5	---	---	---
27	11.0	10.5	11.0	9.0	8.5	9.0	9.0	8.5	9.0	---	---	---
28	11.0	10.5	11.0	8.5	7.5	8.5	9.5	9.0	9.5	---	---	---
29	11.0	10.5	11.0	8.5	6.5	8.0	9.5	9.0	9.5	---	---	---
30	11.5	11.0	11.0	9.0	8.5	8.5	9.0	8.0	8.5	---	---	---
31	12.0	11.0	11.5	---	---	---	8.0	7.5	8.0	---	---	---
MONTH	18.0	10.5	14.0	12.5	6.5	9.5	11.0	4.0	8.0	7.5	2.0	6.0

02011400 JACKSON RIVER NEAR BACOVA, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1				---	---	---	9.0	8.5	9.0	11.5	11.0	11.0
2				9.0	8.0	8.5	10.5	9.0	9.5	11.5	11.0	11.5
3				9.0	8.0	8.5	9.0	9.0	9.0	11.5	11.0	11.5
4				9.5	8.5	9.0	9.0	9.0	9.0	11.5	11.0	11.0
5				10.5	9.0	9.5	9.5	9.0	9.0	12.0	11.0	11.5
6				10.5	10.5	10.5	10.0	9.5	9.5	---	---	---
7				11.5	10.5	11.0	10.0	9.5	10.0	13.0	11.5	12.0
8				11.5	11.5	11.5	10.5	10.0	10.5	13.0	12.5	12.5
9				11.5	11.0	11.0	10.5	10.5	10.5	13.0	11.5	12.0
10				11.0	10.0	10.5	12.0	10.5	10.5	13.0	11.5	12.0
11				10.0	9.0	9.5	10.5	10.0	10.0	13.0	11.5	12.5
12				9.0	8.5	9.0	10.0	9.5	10.0	14.0	12.0	13.0
13				9.0	8.5	8.5	10.5	10.0	10.0	14.0	12.5	13.5
14				9.0	8.5	8.5	10.5	10.0	10.0	14.0	13.0	13.5
15				9.5	9.0	9.0	---	---	---	14.0	14.0	14.0
16				10.0	9.5	9.5	10.5	10.0	10.5	---	---	---
17				10.0	9.0	9.5	10.5	10.0	10.0	13.0	12.5	13.0
18				9.0	9.0	9.0	9.5	9.5	9.5	13.0	12.5	12.5
19				9.0	9.0	9.0	9.5	9.0	9.5	12.5	12.5	12.5
20				9.5	9.0	9.0	9.5	9.0	9.5	13.0	12.0	12.5
21				9.5	9.5	9.5	10.0	9.0	9.5	---	---	---
22				9.5	9.0	9.0	10.5	9.5	10.0	13.0	12.5	12.5
23				9.0	8.5	8.5	11.0	10.0	10.0	13.0	12.5	12.5
24				8.5	8.5	8.5	10.0	10.0	10.0	13.0	12.5	12.5
25				8.5	8.0	8.5	10.0	9.5	10.0	13.5	12.0	12.5
26				9.0	8.5	8.5	10.5	9.5	10.0	14.0	13.5	13.5
27				8.5	8.5	8.5	11.0	10.0	10.5	14.0	13.5	14.0
28				8.5	8.5	8.5	11.0	10.5	10.5	14.0	14.0	14.0
29				9.0	8.5	8.5	11.0	10.5	11.0	14.0	14.0	14.0
30				8.5	8.5	8.5	11.0	11.0	11.0	14.5	14.0	14.5
31				9.0	8.5	9.0	---	---	---	14.5	14.5	14.5
MONTH				11.5	8.0	9.0	12.0	8.5	10.0	14.5	11.0	12.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	14.0	14.0	24.5	19.0	21.5	25.5	22.5	24.0	25.0	21.0	23.0
2	14.5	14.0	14.0	26.5	21.0	23.5	27.0	22.5	24.5	23.5	20.5	22.0
3	15.0	14.5	14.5	26.0	23.0	24.0	27.0	22.0	24.5	24.0	19.0	21.5
4	15.0	15.0	15.0	26.0	21.5	23.5	27.0	23.5	25.5	23.0	20.0	21.5
5	16.0	15.0	15.5	23.5	21.5	22.5	27.0	23.5	25.0	25.0	20.5	22.5
6	16.5	16.0	16.0	24.0	19.5	21.5	27.0	24.0	25.5	25.5	21.0	23.5
7	17.0	16.5	16.5	23.5	17.0	20.0	27.0	22.5	25.0	25.0	21.0	23.5
8	17.0	16.5	16.5	24.0	18.0	21.0	27.5	23.0	25.5	25.0	21.0	22.5
9	17.0	16.5	17.0	24.5	19.5	22.0	27.0	23.5	25.0	24.0	18.5	21.5
10	17.5	16.5	17.0	25.0	19.5	22.0	27.0	22.5	24.5	24.0	17.5	21.0
11	18.0	17.0	17.5	25.0	19.0	22.0	25.5	21.5	23.5	23.0	18.0	21.0
12	18.5	18.0	18.0	25.5	19.5	22.5	23.5	20.5	22.0	24.0	20.0	22.0
13	19.0	18.0	18.5	26.5	21.0	23.5	22.5	18.5	20.5	22.5	21.0	21.5
14	19.0	18.5	18.5	26.0	22.0	24.0	23.0	18.0	20.5	21.5	18.5	20.0
15	24.0	18.5	20.5	26.0	20.5	23.5	24.0	17.5	21.0	19.5	16.0	18.0
16	24.5	18.5	20.5	26.5	22.5	24.5	24.5	19.0	22.0	18.5	15.5	17.0
17	22.0	18.5	20.0	26.5	22.0	24.0	24.5	20.5	23.0	21.0	16.0	18.0
18	22.0	17.5	20.0	24.5	21.5	23.5	25.0	22.0	23.5	21.0	15.5	18.0
19	23.0	18.5	20.5	26.5	22.0	24.0	27.0	22.0	24.5	22.0	17.0	19.5
20	23.5	19.5	21.5	27.5	23.0	25.0	27.5	22.0	25.0	22.5	17.5	20.0
21	22.0	20.0	21.0	29.0	23.5	26.0	29.0	24.0	26.0	21.0	17.5	20.0
22	20.5	19.0	19.5	26.0	23.5	25.0	27.0	23.5	25.5	17.0	14.0	15.5
23	24.0	17.0	20.5	24.5	23.0	23.5	27.0	24.0	25.5	13.5	11.5	12.5
24	24.5	18.5	21.5	25.5	21.5	23.0	25.5	23.5	24.5	14.0	9.5	12.0
25	---	---	---	23.5	20.5	21.5	24.5	22.5	23.5	14.5	9.0	12.0
26	---	---	---	23.5	19.0	21.0	26.0	21.0	23.5	15.5	11.5	13.5
27	---	---	---	25.0	20.0	22.5	26.0	22.0	24.0	16.5	11.5	14.0
28	---	---	---	25.5	20.0	22.5	26.0	23.0	24.5	16.0	12.5	14.5
29	---	---	---	26.0	20.5	23.0	25.5	22.5	24.0	15.5	13.0	14.5
30	---	---	---	26.5	20.5	23.5	25.5	21.0	23.0	13.5	12.0	12.0
31	---	---	---	26.5	22.0	24.5	24.5	21.0	23.0	---	---	---
MONTH	24.5	14.0	18.0	29.0	17.0	23.0	29.0	17.5	24.0	25.5	9.0	18.5
YEAR	29.0	2.0	14.0									

02011460 BACK CREEK NEAR SUNRISE, VA

LOCATION.--Lat 38°14'43", long 79°46'08", Bath County, Hydrologic Unit 02080201, on right bank 900 ft upstream from bridge on State Highway 600, 0.8 mi upstream from Gap Run, and 4.8 mi northeast of Sunrise.

DRAINAGE AREA.--56.7 mi^2.

PERIOD OF RECORD.--June 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,200.02 ft National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation).

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--9 years, 93.3 ft^3/s, 22.35 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,400 ft^3/s Jan. 26, 1978, gage height, 6.80 ft; minimum, 1.5 ft^3/s Sept. 13, 14, 1980; minimum gage height, 0.07 ft July 21, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 29	0600	1270	4.24	Apr. 24	1500	1060	3.95
Dec. 16	0900	*1530	4.53	May 16	1730	1010	3.89
Apr. 15	1430	981	3.84				

Minimum discharge, 1.8 ft^3/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	14	305	59	83	78	121	96	65	19	6.2	3.2
2	9.5	13	348	55	319	72	126	85	58	19	6.8	3.0
3	8.6	12	218	51	577	65	481	82	55	20	6.5	2.7
4	8.2	40	155	45	296	60	308	82	80	27	6.0	2.5
5	7.9	90	123	39	188	59	208	67	78	23	6.0	2.5
6	9.0	63	119	39	144	64	159	59	71	18	6.0	2.3
7	9.5	47	107	37	117	78	133	55	65	15	5.4	2.3
8	8.2	34	96	36	96	145	124	53	55	13	5.4	2.3
9	8.2	28	89	33	78	425	142	53	47	12	5.1	2.0
10	9.0	25	77	33	80	299	663	47	41	12	4.5	2.0
11	10	21	72	42	62	218	442	43	37	11	5.4	1.9
12	9.0	20	70	43	56	166	263	40	34	9.9	16	1.9
13	20	51	56	40	52	133	188	39	30	9.2	9.6	2.9
14	37	57	54	42	53	112	148	39	30	8.5	7.4	3.2
15	26	49	50	43	54	96	616	42	35	7.8	6.0	2.5
16	21	41	866	39	89	82	541	446	42	7.4	5.4	2.3
17	17	36	432	37	135	70	305	525	53	7.4	5.1	2.3
18	15	32	236	32	157	71	212	251	43	6.8	5.1	2.0
19	13	28	171	28	144	501	164	178	62	7.8	5.1	2.0
20	12	28	131	27	122	366	128	155	45	6.8	4.5	2.0
21	12	28	103	29	112	604	106	395	36	7.1	4.1	2.7
22	12	34	80	33	112	485	88	577	32	37	3.4	3.4
23	11	46	72	60	171	275	85	397	27	18	3.4	3.0
24	10	53	77	128	205	192	808	254	24	26	3.4	2.7
25	16	50	88	108	159	144	601	175	22	17	3.4	2.5
26	29	45	93	91	119	112	324	133	19	13	3.4	2.3
27	25	43	89	78	94	129	218	104	17	11	3.2	2.3
28	21	90	86	71	85	220	162	88	17	9.2	3.0	2.3
29	18	840	83	65	---	192	131	83	17	8.1	3.0	2.3
30	17	327	72	67	---	155	110	82	19	7.4	2.7	3.0
31	15	---	64	83	---	137	---	70	---	6.8	2.7	---
TOTAL	456.1	2285	4682	1613	3959	5805	8105	4795	1256	421.2	163.2	74.3
MEAN	14.7	76.2	151	52.0	141	187	270	155	41.9	13.6	5.26	2.48
MAX	37	840	866	128	577	604	808	577	80	37	16	3.4
MIN	7.9	12	50	27	52	59	85	39	17	6.8	2.7	1.9
CFSM	.26	1.34	2.66	.92	2.49	3.30	4.76	2.73	.74	.24	.09	.04
IN.	.30	1.50	3.07	1.06	2.60	3.81	5.32	3.14	.82	.28	.11	.05

CAL YR 1982 TOTAL 39668.4 MEAN 109 MAX 1610 MIN 3.3 CFSM 1.92 IN 26.02
WTR YR 1983 TOTAL 33614.8 MEAN 92.1 MAX 866 MIN 1.9 CFSM 1.62 IN 22.05

02011480 BACK CREEK ON ROUTE 600, NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°08'03", long 79°51'55", Bath County, Hydrologic Unit 02080201, on left bank 100 ft downstream from bridge on State Highway 600, 2.8 mi northeast of Mountain Grove, and 3.0 mi upstream from Little Back Creek.

DRAINAGE AREA.--85.8 mi².

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,818.05 ft National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Aug. 2, 1979, at site 170 ft upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--10 years, 140 ft³/s, 22.16 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,420 ft³/s Dec. 26, 1973, gage height, 9.90 ft, from rating curve extended above 5,200 ft³/s on basis of runoff comparisons with nearby stations; minimum, 1.3 ft³/s Sept. 12-13, 1983, probably result of dam construction.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 29	0730	1720	5.85	Apr. 15	1600	1640	5.75
Dec. 16	1000	*2080	6.25	Apr. 24	Unknown	1670	a5.79
Mar. 21	1500	1330	5.34	May 16	Unknown	1500	a5.58
Apr. 10	1230	1350	5.37				

a About.

Minimum discharge, 1.3 ft³/s Sept. 12-13, probably result of dam construction.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	17	382	82	104	118	146	134	106	29	9.9	2.2
2	15	16	465	75	314	111	142	116	97	28	9.5	2.8
3	14	14	282	69	759	102	600	112	92	24	9.9	2.2
4	13	34	186	59	367	96	382	115	120	38	8.1	1.5
5	12	96	148	54	228	91	248	96	113	40	9.5	2.2
6	11	75	148	54	186	95	196	87	106	30	9.9	4.8
7	14	55	130	52	164	106	168	79	97	23	9.5	2.7
8	12	44	118	50	142	131	157	79	86	19	8.1	1.4
9	11	39	109	44	119	421	174	72	74	17	7.2	1.5
10	14	34	97	43	113	308	999	64	64	16	6.5	1.5
11	14	30	91	52	105	233	660	60	56	15	7.2	1.4
12	13	29	88	54	92	191	375	56	53	14	17	1.4
13	26	56	65	51	84	164	261	55	51	11	16	1.4
14	45	67	56	53	88	144	200	54	56	12	9.9	3.8
15	34	59	57	55	96	129	941	56	55	12	8.1	5.6
16	27	50	1230	50	146	113	856	560	55	11	6.8	3.8
17	22	43	679	44	218	102	445	851	92	8.1	6.5	3.5
18	19	38	332	38	252	109	292	375	65	7.5	7.8	2.8
19	17	34	228	38	208	622	218	255	83	9.5	6.8	3.8
20	15	34	178	43	182	457	172	233	71	8.1	5.9	3.3
21	16	38	144	50	172	860	139	474	56	7.8	3.8	3.8
22	16	40	118	52	174	678	118	885	50	42	3.0	5.6
23	15	52	106	73	236	353	115	557	42	31	4.3	4.0
24	13	62	105	144	286	236	1200	353	37	59	3.8	5.1
25	26	59	112	133	215	184	950	245	32	35	4.8	2.7
26	40	55	115	118	164	146	481	188	29	24	3.5	3.0
27	33	52	111	105	136	146	318	148	23	18	3.3	3.3
28	29	74	105	98	125	245	236	125	22	16	2.8	3.3
29	24	1190	104	91	---	218	186	126	23	13	2.8	2.1
30	21	445	95	97	---	180	153	140	33	12	2.4	5.6
31	19	---	87	105	---	164	---	116	---	10	2.1	---
TOTAL	619	2931	6271	2126	5475	7253	11528	6866	1939	640.0	216.7	92.1
MEAN	20.0	97.7	202	68.6	196	234	384	221	64.6	20.6	6.99	3.07
MAX	45	1190	1230	144	759	860	1200	885	120	59	17	5.6
MIN	11	14	56	38	84	91	115	54	22	7.5	2.1	1.4
CFSM	.23	1.14	2.35	.80	2.28	2.73	4.47	2.58	.75	.24	.08	.04
IN.	.27	1.27	2.72	.92	2.37	3.14	5.00	2.98	.84	.28	.09	.04

CAL YR 1982 TOTAL 57923.1 MEAN 159 MAX 2950 MIN 3.2 CFSM 1.85 IN 25.10
WTR YR 1983 TOTAL 45956.8 MEAN 126 MAX 1230 MIN 1.4 CFSM 1.47 IN 19.92

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°04'10", long 79°53'50", Bath County, Hydrologic Unit 02080201, on left bank 0.3 mi downstream from Cummings Run, 0.8 mi downstream from bridge on State Highway 39, and 2.1 mi south of Mountain Grove.

DRAINAGE AREA.--134 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,701.45 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Corps of Engineers gage-height radio transmitter at station, receiver and recorder at Lake Moomaw Dam.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 184 ft^3/s, 18.65 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s Mar. 7, 1967, gage height, 10.77 ft, from rating curve extended above 4,000 ft^3/s on basis of slope-area measurements at gage heights 7.39 ft, 9.05 ft, and 9.35 ft; minimum, 1.5 ft^3/s Aug. 18, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 29	Unknown	2760	a6.25	Apr. 15	1600	2200	5.96
Dec. 16	1045	*2800	6.46	Apr. 24	1345	2120	5.89
Apr. 10	1115	1930	5.72	May 16	1900	1930	5.72

a From high-water mark.

Minimum discharge, 4.9 ft^3/s Sept. 9, 10, 11-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	36	620	115	147	160	234	186	162	43	16	6.2
2	27	33	698	108	400	147	228	160	145	41	15	6.5
3	24	30	450	102	977	136	822	152	134	42	18	6.8
4	23	56	310	92	566	125	614	152	177	55	17	5.6
5	21	136	237	84	361	117	425	132	168	57	14	5.9
6	20	125	237	82	276	119	326	119	152	46	18	7.5
7	21	101	210	79	231	132	272	109	138	37	14	7.5
8	20	86	186	76	192	152	249	108	121	32	14	5.6
9	20	75	165	71	152	542	269	104	104	29	12	5.2
10	24	67	145	71	145	497	1420	94	92	26	12	4.9
11	25	59	132	81	138	415	963	89	82	25	13	4.9
12	24	55	132	86	129	326	584	82	74	23	18	4.9
13	53	81	106	84	113	258	405	81	70	18	21	5.2
14	83	103	90	86	117	213	310	79	78	20	14	6.2
15	63	95	90	89	123	183	1290	81	76	18	13	8.9
16	48	85	1590	84	222	155	1170	796	79	18	11	8.4
17	41	76	921	73	361	136	668	1050	109	15	11	6.8
18	37	69	508	62	420	145	455	530	86	14	11	7.1
19	32	65	348	58	339	907	334	361	98	15	11	7.1
20	28	63	265	58	286	734	262	339	92	14	10	7.1
21	28	65	207	65	265	1220	213	815	82	13	8.4	7.1
22	26	67	160	68	279	1000	174	1120	71	44	7.1	8.4
23	26	83	140	95	400	584	168	740	62	41	6.8	7.5
24	23	99	140	234	455	400	1550	497	55	74	8.0	8.4
25	45	99	152	222	343	298	1230	343	50	47	8.0	7.1
26	76	92	162	186	252	231	680	265	44	33	8.0	6.5
27	69	86	157	162	198	231	445	210	38	26	6.5	6.2
28	63	143	150	147	174	400	326	171	34	23	7.1	6.8
29	53	1660	147	138	---	366	258	171	40	21	6.8	5.9
30	47	698	134	142	---	302	216	216	52	18	6.5	7.5
31	40	---	121	150	---	265	---	186	---	17	6.2	---
TOTAL	1160	4588	9110	3250	8061	10896	16560	9538	2765	945	362.4	199.7
MEAN	37.4	153	294	105	288	351	552	308	92.2	30.5	11.7	6.66
MAX	83	1660	1590	234	977	1220	1550	1120	177	74	21	8.9
MIN	20	30	90	58	113	117	168	79	34	13	6.2	4.9
CFSM	.28	1.14	2.19	.78	2.15	2.62	4.12	2.30	.69	.23	.09	.05
IN.	.32	1.27	2.53	.90	2.24	3.02	4.60	2.65	.77	.26	.10	.06

CAL YR 1982 TOTAL 83078.5 MEAN 228 MAX 4070 MIN 5.5 CFSM 1.70 IN 23.06
WTR YR 1983 TOTAL 67435.1 MEAN 185 MAX 1660 MIN 4.9 CFSM 1.38 IN 18.72

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Temperature recorder since June 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum recorded, 31.0°C Aug. 5, 11, 1980, July 21, Aug. 21, 1983; minimum recorded, 0.0°C on many days during winter periods in 1979, 1981, and Jan. 23, 24, Feb. 7, 1982.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 31.0°C July 21, Aug. 21; minimum recorded, 0.5°C Jan. 17, 18, 21.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.0	15.0	17.0	15.0	12.0	13.5	11.0	9.0	10.0	9.0	5.5	7.5
2	21.0	15.5	18.0	16.0	11.5	13.5	13.0	10.0	11.5	9.0	6.0	7.5
3	23.0	17.5	20.0	15.0	12.0	13.5	14.5	12.0	13.0	9.0	4.0	7.0
4	22.0	17.5	19.5	14.0	11.0	13.0	14.5	12.0	13.0	7.0	2.5	4.0
5	21.0	17.0	19.5	11.0	8.5	9.5	14.5	12.0	13.0	8.5	2.0	4.5
6	23.0	17.5	20.0	9.0	6.5	8.0	14.0	11.0	12.5	7.5	4.0	5.5
7	21.5	17.5	19.5	9.5	6.0	7.5	10.5	8.5	9.5	7.0	3.0	5.0
8	21.0	18.0	19.5	10.0	6.0	8.0	9.0	7.0	8.0	7.0	2.0	3.5
9	21.0	18.5	20.0	10.5	7.0	9.0	8.0	6.0	7.0	6.5	4.0	5.0
10	19.5	16.0	17.5	11.5	8.0	9.5	7.0	3.5	5.0	7.5	5.0	6.5
11	16.0	15.0	15.5	12.0	9.0	10.5	8.5	5.0	7.0	9.5	6.5	8.0
12	19.0	14.5	17.0	13.0	9.5	11.5	7.0	4.0	5.5	7.0	2.5	5.0
13	17.0	15.5	16.0	12.0	7.0	9.0	4.0	1.5	2.5	5.0	1.5	3.0
14	15.5	14.0	14.5	7.5	5.0	6.5	4.0	1.5	2.5	6.0	2.0	4.0
15	16.0	13.0	14.5	7.5	5.5	6.5	6.5	2.0	4.5	6.5	2.0	4.0
16	14.0	11.0	12.5	7.0	3.5	5.5	9.0	5.0	7.5	2.0	1.0	1.5
17	12.5	9.0	11.0	7.5	4.0	6.0	9.0	6.5	8.5	2.0	.5	1.5
18	12.5	8.5	11.0	10.0	7.0	8.0	6.5	4.0	5.0	2.0	.5	1.0
19	14.5	10.5	12.5	9.5	7.5	8.5	6.0	4.5	5.0	2.0	1.0	1.5
20	15.0	11.5	13.5	11.0	9.5	10.0	7.5	5.0	6.0	1.5	1.0	1.5
21	15.5	12.0	13.5	12.5	10.0	11.0	5.0	3.0	4.0	2.0	.5	1.0
22	13.0	9.0	11.0	13.0	11.5	12.0	5.5	2.0	3.0	2.0	1.0	1.5
23	11.5	7.5	9.5	15.0	12.0	13.0	8.0	3.5	6.0	4.5	1.5	3.0
24	9.5	8.0	9.0	13.5	8.0	11.0	8.5	5.0	6.5	5.0	2.0	3.5
25	9.5	8.5	9.0	8.0	5.5	7.0	11.5	7.5	9.5	3.5	2.0	2.5
26	11.5	7.5	9.5	8.5	5.5	7.0	12.5	10.5	11.5	5.0	2.5	3.5
27	12.5	8.0	10.5	10.5	8.0	8.5	12.5	11.5	12.5	6.0	2.0	3.5
28	13.0	8.5	11.0	8.0	7.0	7.5	12.5	11.0	12.0	6.5	3.5	4.5
29	13.0	9.0	11.0	10.5	7.5	9.0	12.5	7.5	11.0	7.0	2.0	4.0
30	13.5	9.5	12.0	11.0	8.5	9.5	9.0	5.5	7.5	7.0	4.0	5.0
31	15.0	11.0	13.0	---	---	---	8.5	7.0	8.0	7.0	3.5	5.5
MONTH	23.0	7.5	14.5	16.0	3.5	9.5	14.5	1.5	8.0	9.5	.5	4.0

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.0	3.0	5.0	8.5	6.5	7.0	14.0	6.0	10.0			
2	8.0	5.5	6.5	10.0	4.5	7.0	11.5	10.0	10.5			
3	7.5	5.0	6.5	10.5	5.0	8.0	10.5	9.0	9.5			
4	4.5	2.0	3.5	12.5	7.0	10.0	12.5	8.5	10.0			
5	4.0	1.5	3.0	13.5	7.5	11.0	12.0	9.0	10.5			
6	4.0	2.0	3.5	12.5	11.0	12.0	14.0	10.5	12.0			
7	5.5	3.0	4.0	15.0	10.5	12.5	13.5	12.0	13.0			
8	5.0	2.0	3.0	13.0	11.0	12.0	13.5	11.5	12.5			
9	4.0	1.5	2.5	13.0	9.5	11.0	13.0	10.5	11.5			
10	4.0	2.0	3.0	10.0	7.5	9.0	14.0	9.5	12.5			
11	3.0	1.0	2.0	7.5	6.0	7.0	12.0	9.5	10.5			
12	6.0	1.5	2.5	9.0	5.0	7.0	14.5	9.0	11.5			
13	4.0	1.0	2.0	14.0	6.0	9.5	15.5	9.5	12.5			
14	4.0	1.5	2.5	12.0	5.5	8.5	12.5	12.0	12.0			
15	6.0	1.0	3.5	12.0	6.0	9.0	13.0	9.5	11.0			
16	7.0	2.5	5.0	11.0	7.0	9.0	13.5	8.0	10.5			
17	7.5	3.5	5.5	8.5	7.0	7.5	12.0	9.0	10.0			
18	7.0	3.5	5.5	9.0	7.5	8.5	10.5	7.5	9.0			
19	7.5	4.0	5.5	10.5	8.0	9.0	10.5	7.0	8.5			
20	7.5	3.5	5.5	11.0	7.0	9.0	13.0	7.0	9.5			
21	8.0	3.5	6.0	9.5	7.0	9.0	14.5	7.0	10.5			
22	8.5	4.5	6.5	7.0	5.5	6.5	---	---	---			
23	8.5	6.5	7.0	9.0	4.0	6.5	---	---	---			
24	7.5	4.5	6.0	8.5	5.0	6.5	---	---	---			
25	8.5	4.5	7.0	---	---	---	---	---	---			
26	7.0	3.0	5.0	10.5	4.0	7.5	---	---	---			
27	7.0	2.0	4.0	8.0	5.5	6.5	---	---	---			
28	7.0	3.0	5.5	7.5	5.5	6.5	---	---	---			
29	---	---	---	7.5	5.5	6.0	---	---	---			
30	---	---	---	9.0	4.0	6.5	---	---	---			
31	---	---	---	7.5	6.5	7.0	---	---	---			
MONTH	8.5	1.0	4.5	15.0	4.0	8.5	15.5	6.0	11.0			

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1				26.5	18.5	22.0	26.0	21.5	24.0	28.0	19.5	23.0
2				29.5	20.5	24.5	29.0	21.0	24.5	23.5	18.5	21.0
3				29.0	22.5	24.5	28.5	20.0	24.0	25.5	17.0	20.5
4				27.0	20.5	23.5	28.5	20.5	24.0	23.5	18.0	20.5
5				24.0	20.5	22.0	27.0	21.0	24.0	27.5	18.5	22.5
6				26.0	18.5	21.5	28.0	22.0	25.0	25.5	19.5	22.5
7				25.5	15.5	20.0	28.0	20.5	24.0	26.0	20.0	22.5
8				26.0	16.5	21.0	29.5	21.5	25.0	27.0	18.0	21.5
9				27.0	17.5	22.0	28.5	22.0	24.5	27.0	16.5	20.5
10				27.5	19.0	22.5	27.5	20.0	23.5	27.5	15.5	20.5
11				26.5	17.5	22.0	25.5	19.5	22.0	24.0	16.0	20.0
12				27.5	17.5	22.5	23.0	19.0	20.5	26.0	17.5	21.0
13				28.5	20.0	24.0	23.0	16.5	19.5	21.0	19.0	20.0
14				28.5	20.0	24.0	24.0	16.5	19.5	23.5	17.0	19.5
15				27.0	19.5	23.5	25.5	16.0	20.5	20.0	15.0	17.0
16				29.0	21.5	25.0	25.5	17.5	21.5	19.0	14.5	16.5
17				29.0	21.5	25.0	25.0	18.5	22.0	21.5	15.0	17.5
18				24.5	20.5	23.0	27.0	20.5	23.0	23.5	14.0	18.0
19				29.0	20.5	24.5	28.5	21.0	24.5	24.0	15.5	19.0
20				30.5	22.0	25.5	30.0	20.0	24.5	25.0	16.5	20.0
21				31.0	23.0	26.5	31.0	23.0	26.0	20.0	16.0	19.0
22				28.5	23.0	25.5	28.5	22.0	25.0	19.0	12.5	15.0
23				25.5	22.5	23.5	28.5	22.0	24.5	14.0	10.0	12.0
24				28.0	21.0	24.0	24.5	22.0	23.5	16.0	8.0	11.0
25				23.5	20.0	22.0	25.5	21.0	22.5	17.0	8.5	12.0
26				25.0	18.0	21.5	28.0	19.0	23.0	17.0	10.5	13.0
27				27.5	19.0	23.0	26.0	20.5	23.0	18.5	11.0	14.5
28				28.0	19.5	23.5	26.0	21.5	23.5	17.0	12.0	14.5
29				28.0	19.5	23.5	27.0	20.5	23.0	16.5	12.0	14.0
30				29.0	19.5	24.0	28.0	18.5	22.5	12.0	10.5	11.5
31				29.0	21.0	24.5	27.0	19.5	22.5	---	---	---
MONTH				31.0	15.5	23.5	31.0	16.0	23.0	28.0	8.0	18.0
YEAR	31.0	.5	12.5									

02011795 LAKE MOOMAW NEAR HOT SPRINGS, VA

LOCATION.--Lat 37°57'04", long 79°59'21", Alleghany County, Hydrologic Unit 02080201, in control tower at Gathright Dam on Jackson River, 0.9 mi upstream from Cedar Creek, 7.6 mi southwest of Hot Springs, and 19 mi upstream from Covington.

DRAINAGE AREA.--344 mi^2.

PERIOD OF RECORD.--December 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers benchmark).

REMARKS.--Lake is formed by rolled rockfill dam with an impervious compacted earth (clay) core. Spillway with crest at elevation 1,667.5 ft is in a divide about 2.5 mi south of the dam, ungated, and 2,450 ft long with a base width of 100 ft. Except for flood flows, all discharge will be through a diversion tunnel with the invert of the entrance being in an intake tower 260 ft high. Elevation of invert is 1,430.5 ft. Portals in the tower at nine levels permit oxygenated water from the surface and cold water from the bottom of the lake to be mixed for water-quality control. Sluice gates in the tower control flood flow releases. Storage began Dec. 10, 1979. Total capacity at top of dam, elevation 1,684.5 ft is 502,600 acre-ft of which 81,100 acre-ft is above spillway crest. Capacity at maximum conservation pool, elevation, 1,582.0 ft is 123,700 acre-ft; capacity at minimum conservation pool, elevation 1,554.0 ft is 63,000 acre-ft. Lake is used for flood control, low-water augmentation for water-quality control, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 138,290 acre-ft June 14, 1982, elevation, 1,587.6 ft; minimum (after first filling to minimum conservation pool), 92,120 acre-ft Sept. 30, 1983, elevation, 1,568.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 131,180 acre-ft Apr. 25, elevation, 1,584.9 ft; minimum, 92,120 acre-ft Sept. 30, elevation, 1,568.6 ft.

MONTHEND ELEVATION AND CONTENTS AT 1500, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1573.1	102210	
Oct. 31	1571.9	99460	-2750
Nov. 30	1575.4	107580	+8120
Dec. 31	1581.8	123240	+15660
CAL YR 1982			+11130
Jan. 31	1581.9	123490	+250
Feb. 28	1581.5	122480	-1010
Mar. 31	1581.6	122730	+250
Apr. 30	1581.8	123240	+510
May 31	1582.0	123740	+500
June 30	1581.2	121720	-2020
July 31	1577.3	112110	-9610
Aug. 31	1573.2	102440	-9670
Sept. 30	1568.6	92120	-10320
WTR YR 1983			-10090

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA

LOCATION.--Lat 37°56'54", long 79°56'58", Alleghany County, Hydrologic Unit 02080201, on right bank 0.4 mi upstream from Cedar Creek, 0.5 mi downstream from Gathright Dam and Moomaw Lake, and 7.3 mi southwest of Hot Springs.

DRAINAGE AREA.--345 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR VA-81-1: 1980.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 20, 1973, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795). Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--10 years, 455 ft^3/s, 17.91 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft^3/s Dec. 26, 1973, result of cofferdam failure during construction of Gathright Dam, gage height, 18.77 ft, from rating curve extended above 4,400 ft^3/s on basis of slope-area measurement of peak flow; minimum, 3.0 ft^3/s July 12, 1979, result of gate closure at Gathright Dam, gage height, 7.78 ft; minimum daily, 47 ft^3/s Sept. 2, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 17.20 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,780 ft^3/s Apr. 25, gage height, 13.28 ft; minimum, 7.4 ft^3/s Nov. 2, 3, 15, Jan. 12; minimum daily, 121 ft^3/s Nov. 2, 3, 5, 15, 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	123	151	182	307	436	587	484	450	265	243	200
2	151	121	151	182	344	412	480	484	449	261	226	200
3	154	121	151	182	1640	316	1450	484	448	261	226	200
4	151	123	151	182	1830	261	2240	484	449	261	226	200
5	151	121	151	182	1200	261	1550	421	447	261	226	200
6	151	151	154	182	880	264	954	332	445	261	226	200
7	151	151	154	181	594	265	831	269	445	261	226	200
8	151	151	152	179	479	331	758	269	371	261	226	200
9	151	151	151	179	436	642	703	267	288	261	226	179
10	151	151	151	179	380	825	1490	268	265	261	225	220
11	151	151	151	179	380	820	2590	212	265	261	224	223
12	151	151	151	157	380	806	2020	225	265	261	225	223
13	151	151	151	181	378	806	1220	226	265	261	226	223
14	151	151	151	181	376	695	942	226	238	261	223	223
15	151	121	172	181	376	532	1150	226	235	261	226	223
16	151	151	1670	181	376	457	2320	542	253	260	188	223
17	151	151	2340	182	481	375	2370	2200	267	258	203	223
18	151	151	1130	163	715	421	1640	2480	265	258	203	222
19	133	151	1130	151	715	621	946	1420	265	259	203	221
20	151	151	899	151	719	964	738	1130	265	258	203	220
21	151	151	602	151	719	1750	560	1000	265	258	202	220
22	151	151	520	151	719	2940	482	1890	265	260	200	222
23	151	151	436	151	781	2310	483	2490	265	259	200	222
24	151	148	387	179	824	1310	1240	1620	265	260	200	222
25	151	151	385	455	826	885	3770	995	265	258	200	220
26	151	151	385	479	826	831	3850	733	265	258	200	220
27	151	148	385	395	824	828	1940	550	263	258	200	219
28	151	151	267	370	604	766	876	445	265	261	200	219
29	151	121	197	353	---	722	606	450	265	261	200	219
30	151	121	188	353	---	722	484	450	265	261	200	219
31	151	---	182	325	---	722	---	450	---	265	200	191
TOTAL	4671	4288	13396	6879	19109	24296	41270	23722	9288	8071	6576	6416
MEAN	151	143	432	222	682	784	1376	765	310	260	212	214
MAX	156	151	2340	479	1830	2940	3850	2490	450	265	243	223
MIN	133	121	151	151	307	261	480	212	235	258	188	179
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173
MEAN‡	106	279	687	226	664	788	1385	773	276	104	55.1	40.9
CFSM‡	.31	.81	1.99	.66	1.92	2.28	4.01	2.24	.80	.30	.16	.12
IN‡	.35	.90	2.30	.76	2.01	2.63	4.48	2.58	.89	.35	.18	.13

CAL YR 1982 TOTAL 188127 MEAN 515 MAX 4960 MIN 62 MEAN‡ 530 CFSM‡ 1.54 IN‡ 20.88
WTR YR 1983 TOTAL 167982 MEAN 460 MAX 3850 MIN 121 MEAN‡ 446 CFSM‡ 1.29 IN‡ 17.56

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1978 to current year.
pH: October 1978 to current year.
WATER TEMPERATURES: October 1978 to current year.
DISSOLVED OXYGEN: October 1978 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instruments. The intake tower at Gathright Dam permits selective withdrawal of water from one or more reservoir depths.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 225 micromhos Apr. 13, 1981; minimum recorded, 78 micromhos May 14, 1979.
pH: Maximum recorded, 8.6 units Jan. 29, 1982, Jan. 13, 1983; minimum recorded, 7.0 units on several days in 1979, 1980, and Jan. 22, 23, 1983.
WATER TEMPERATURES: Maximum recorded, 28.0°C Aug. 1, 2, 1979; minimum recorded, 0.0°C Feb. 16, 17, 18, 19, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 222 micromhos Nov. 5, 15; minimum recorded, 110 micromhos May 22.
pH: Maximum recorded, 8.6 units Jan. 13; minimum recorded, 7.0 units Jan. 22, 23.
WATER TEMPERATURES: Maximum recorded, 25.5°C July 21. Aug. 9; minimum recorded, 4.0°C on many days in February.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	144	140	144	194	142	148	154	150	153	---	---	---
2	144	140	143	204	146	152	154	152	154	---	---	---
3	144	140	144	182	146	150	154	152	154	---	---	---
4	146	142	144	218	146	154	154	150	153	---	---	---
5	146	132	139	222	146	154	154	150	153	---	---	---
6	148	132	141	148	146	146	154	150	153	140	138	139
7	152	146	149	146	146	146	154	150	154	140	138	140
8	152	148	151	146	142	146	154	150	153	140	138	139
9	156	150	152	146	142	146	154	150	154	140	138	138
10	152	150	151	148	146	146	156	150	154	140	138	139
11	152	150	151	148	142	146	156	150	153	140	138	139
12	154	150	153	148	146	147	---	---	---	192	138	142
13	154	150	153	146	142	146	---	---	---	138	138	138
14	154	150	153	146	140	144	---	---	---	140	138	139
15	154	150	152	222	142	153	---	---	---	140	138	139
16	152	150	152	146	142	144	---	---	---	140	138	140
17	152	150	151	148	142	146	---	---	---	140	138	140
18	152	148	151	148	146	147	---	---	---	140	138	140
19	168	150	151	150	146	148	---	---	---	142	140	140
20	152	148	150	148	148	148	---	---	---	140	140	140
21	152	148	150	150	148	149	---	---	---	140	140	140
22	150	148	149	150	148	148	---	---	---	140	140	140
23	152	146	149	150	148	148	---	---	---	142	140	140
24	150	144	147	150	148	149	---	---	---	142	138	140
25	148	144	145	150	148	150	---	---	---	140	132	137
26	146	142	144	152	150	150	---	---	---	138	136	136
27	148	144	146	152	150	151	---	---	---	138	136	136
28	148	146	148	152	150	151	---	---	---	136	136	136
29	148	144	146	214	150	161	---	---	---	138	136	137
30	148	142	146	216	152	160	---	---	---	138	136	137
31	146	142	145	---	---	---	---	---	---	138	136	137
MONTH	168	132	148	222	140	149	156	150	153	192	132	139

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	138	136	138	138	132	136	134	130	132	120	118	119
2	138	136	137	136	132	135	136	130	132	120	118	118
3	136	130	135	138	136	137	136	126	130	120	116	119
4	134	130	134	138	136	137	132	126	128	120	118	118
5	134	130	134	136	136	136	132	126	129	120	118	119
6	136	132	135	138	136	136	138	128	130	122	120	120
7	136	136	136	138	136	136	130	126	128	122	120	121
8	136	136	136	138	132	136	130	128	128	122	120	120
9	138	136	137	136	130	134	130	124	128	120	112	118
10	138	136	138	134	130	133	144	122	129	116	112	116
11	138	136	137	134	132	132	142	122	128	136	116	118
12	138	136	137	134	130	133	144	122	128	118	116	117
13	138	136	137	136	130	134	132	120	124	118	116	116
14	138	136	136	138	130	134	140	122	126	118	116	116
15	138	136	136	136	132	134	214	122	139	118	116	117
16	138	136	136	134	130	132	134	120	125	120	114	118
17	186	132	139	170	132	136	124	120	123	116	112	114
18	136	132	135	132	130	131	124	120	123	112	112	112
19	136	132	135	136	130	131	124	120	122	114	112	112
20	136	132	135	134	126	131	128	120	123	114	112	112
21	136	132	135	134	128	131	128	122	123	112	112	112
22	136	132	135	132	128	130	128	122	123	112	110	112
23	136	132	135	132	128	130	124	120	122	---	---	---
24	136	132	134	132	128	132	124	120	122	---	---	---
25	136	130	134	132	128	130	120	112	117	---	---	---
26	140	132	135	132	130	131	116	114	115	---	---	---
27	140	134	137	132	130	131	120	112	117	---	---	---
28	138	132	136	132	130	131	120	118	119	---	---	---
29	---	---	---	132	130	131	120	118	118	---	---	---
30	---	---	---	132	130	131	120	118	119	---	---	---
31	---	---	---	132	130	131	---	---	---	---	---	---
MONTH	186	130	136	170	126	133	214	112	125	136	110	117

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	124	122	122	134	130	133	---	---	---
2	---	---	---	124	120	123	138	134	136	---	---	---
3	---	---	---	124	120	123	136	134	136	---	---	---
4	---	---	---	126	120	123	140	136	137	---	---	---
5	---	---	---	126	122	124	138	136	137	---	---	---
6	---	---	---	126	122	124	140	138	139	---	---	---
7	---	---	---	126	120	124	140	138	138	---	---	---
8	---	---	---	---	---	---	140	138	140	180	148	151
9	---	---	---	---	---	---	142	138	140	150	148	149
10	---	---	---	---	---	---	142	138	140	154	148	151
11	122	120	120	---	---	---	142	140	141	152	150	151
12	120	120	120	---	---	---	142	140	142	150	146	149
13	122	120	120	126	126	126	144	140	142	148	146	146
14	122	120	121	128	126	126	146	140	142	150	146	147
15	122	120	121	128	126	127	156	138	141	150	146	148
16	---	---	---	128	126	127	142	138	140	148	144	146
17	---	---	---	128	126	128	142	140	141	148	146	147
18	123	121	122	130	128	129	142	138	141	148	148	148
19	123	121	122	130	128	129	142	140	141	---	---	---
20	123	121	123	130	128	130	144	140	142	---	---	---
21	123	118	120	132	128	130	144	140	142	---	---	---
22	120	118	119	132	130	131	144	138	142	---	---	---
23	122	120	120	134	130	131	144	140	143	---	---	---
24	122	120	120	134	130	131	---	---	---	150	148	148
25	122	120	120	132	130	131	---	---	---	150	148	148
26	122	120	121	132	132	132	---	---	---	148	146	148
27	122	120	121	132	130	132	---	---	---	148	146	147
28	122	120	122	134	132	132	---	---	---	148	148	148
29	122	120	122	134	132	133	---	---	---	148	146	148
30	124	122	122	134	132	133	---	---	---	148	146	148
31	---	---	---	134	132	133	---	---	---	---	---	---
MONTH	124	118	121	134	120	128	156	130	140	180	144	148
YEAR	222	110	136									

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.7	7.6	7.6	7.7	7.5	7.6	7.7	7.5	7.6	---	---	---
2	7.7	7.6	7.6	7.8	7.5	7.6	7.7	7.6	7.6	---	---	---
3	7.7	7.6	7.6	7.7	7.5	7.6	7.7	7.6	7.6	---	---	---
4	7.8	7.6	7.7	7.8	7.5	7.6	7.7	7.6	7.6	---	---	---
5	7.8	7.6	7.7	7.9	7.6	7.7	7.7	7.6	7.7	---	---	---
6	7.8	7.6	7.7	7.7	7.7	7.7	7.7	7.6	7.7	8.1	7.3	7.7
7	7.9	7.7	7.7	7.7	7.6	7.7	7.9	7.7	7.7	8.1	7.6	7.9
8	7.9	7.7	7.8	7.7	7.6	7.6	7.8	7.7	7.7	7.9	7.6	7.8
9	7.8	7.7	7.8	7.8	7.6	7.6	7.8	7.7	7.8	7.9	7.8	7.9
10	7.8	7.7	7.8	7.7	7.6	7.6	7.8	7.7	7.8	7.9	7.8	7.9
11	7.8	7.7	7.7	7.7	7.5	7.6	7.8	7.6	7.7	7.9	7.8	7.8
12	7.8	7.7	7.7	7.6	7.5	7.5	---	---	---	8.3	7.8	8.0
13	7.8	7.7	7.7	7.6	7.5	7.5	---	---	---	8.6	8.2	8.3
14	7.8	7.7	7.7	7.6	7.5	7.5	---	---	---	8.4	8.1	8.2
15	7.8	7.7	7.7	7.8	7.4	7.5	---	---	---	8.2	8.0	8.0
16	7.8	7.7	7.7	7.6	7.4	7.5	---	---	---	8.4	8.0	8.3
17	7.8	7.7	7.7	7.5	7.4	7.5	---	---	---	8.3	8.0	8.2
18	7.8	7.7	7.7	7.5	7.3	7.4	---	---	---	8.1	7.9	8.0
19	7.7	7.6	7.7	7.5	7.3	7.4	---	---	---	8.1	7.4	7.7
20	7.7	7.6	7.7	7.5	7.4	7.5	---	---	---	7.6	7.3	7.4
21	7.7	7.6	7.7	7.5	7.4	7.4	---	---	---	7.8	7.3	7.5
22	7.7	7.7	7.7	7.5	7.2	7.4	---	---	---	7.4	7.0	7.2
23	7.7	7.6	7.7	7.4	7.2	7.3	---	---	---	7.3	7.0	7.1
24	7.7	7.6	7.7	7.6	7.4	7.5	---	---	---	7.3	7.1	7.2
25	7.7	7.6	7.6	7.6	7.5	7.6	---	---	---	7.4	7.1	7.2
26	7.7	7.6	7.6	7.6	7.5	7.5	---	---	---	7.4	7.2	7.3
27	7.7	7.4	7.6	7.5	7.5	7.5	---	---	---	7.4	7.2	7.3
28	7.7	7.6	7.6	7.5	7.5	7.5	---	---	---	7.5	7.4	7.4
29	7.7	7.5	7.6	7.7	7.5	7.5	---	---	---	7.7	7.5	7.6
30	7.6	7.5	7.6	7.9	7.5	7.6	---	---	---	7.7	7.6	7.7
31	7.6	7.5	7.5	---	---	---	---	---	---	7.8	7.7	7.8
MONTH	7.9	7.4	7.7	7.9	7.2	7.5	7.9	7.5	7.7	8.6	7.0	7.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.9	7.7	7.8	7.8	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.6
2	7.7	7.6	7.7	7.7	7.7	7.7	7.8	7.7	7.7	7.7	7.6	7.6
3	7.7	7.6	7.6	7.8	7.7	7.7	7.9	7.7	7.7	7.8	7.6	7.6
4	7.9	7.7	7.8	7.8	7.7	7.7	7.9	7.7	7.8	7.7	7.6	7.6
5	7.7	7.6	7.7	7.8	7.7	7.7	7.8	7.7	7.8	7.7	7.6	7.6
6	7.8	7.6	7.7	7.7	7.7	7.7	8.0	7.7	7.8	7.7	7.6	7.6
7	7.9	7.8	7.8	7.8	7.7	7.7	7.8	7.7	7.7	7.7	7.5	7.6
8	7.9	7.7	7.8	7.8	7.7	7.7	7.8	7.7	7.8	7.7	7.6	7.6
9	7.7	7.6	7.6	7.8	7.7	7.7	7.8	7.7	7.8	8.1	7.6	7.8
10	7.6	7.6	7.6	7.8	7.7	7.7	8.1	7.7	7.8	8.1	7.9	8.0
11	7.7	7.6	7.6	7.8	7.8	7.8	8.1	7.7	7.8	8.1	7.8	7.9
12	7.7	7.6	7.6	7.9	7.8	7.8	8.1	7.7	7.8	8.1	7.8	8.0
13	7.7	7.6	7.7	8.0	7.8	7.9	7.9	7.7	7.8	8.1	7.8	8.0
14	7.7	7.6	7.7	8.0	7.8	7.9	8.1	7.7	7.8	8.1	7.8	8.0
15	7.7	7.6	7.7	7.9	7.7	7.8	8.0	7.6	7.7	8.1	7.8	7.9
16	7.7	7.7	7.7	7.9	7.7	7.8	8.0	7.6	7.7	8.0	7.5	7.7
17	7.8	7.7	7.7	7.9	7.7	7.8	7.7	7.6	7.7	7.6	7.4	7.5
18	7.7	7.6	7.7	7.9	7.7	7.8	7.7	7.6	7.6	7.5	7.4	7.4
19	7.7	7.6	7.7	8.0	7.7	7.8	8.0	7.6	7.7	7.5	7.4	7.5
20	7.7	7.6	7.7	7.9	7.7	7.7	8.1	7.7	7.8	7.5	7.4	7.4
21	7.7	7.6	7.7	7.9	7.6	7.7	8.0	7.6	7.8	7.6	7.4	7.5
22	7.7	7.7	7.7	7.8	7.7	7.7	7.9	7.6	7.8	7.6	7.4	7.5
23	7.7	7.7	7.7	7.8	7.7	7.7	7.7	7.6	7.6	---	---	---
24	7.8	7.7	7.7	7.8	7.7	7.7	7.7	7.5	7.6	---	---	---
25	7.8	7.7	7.7	7.7	7.7	7.7	7.7	7.5	7.6	---	---	---
26	8.0	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.6	---	---	---
27	8.0	7.7	7.8	7.8	7.7	7.7	7.6	7.5	7.5	---	---	---
28	7.9	7.7	7.8	7.8	7.7	7.8	7.6	7.5	7.6	---	---	---
29	---	---	---	7.8	7.7	7.8	7.7	7.6	7.6	---	---	---
30	---	---	---	7.8	7.7	7.8	7.7	7.6	7.6	---	---	---
31	---	---	---	7.8	7.7	7.7	---	---	---	---	---	---
MONTH	8.0	7.6	7.7	8.0	7.6	7.8	8.1	7.5	7.7	8.1	7.4	7.7

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	7.9	7.8	7.8	8.1	8.0	8.0	---	---	---
2	---	---	---	7.9	7.8	7.8	8.2	8.0	8.1	---	---	---
3	---	---	---	7.9	7.7	7.8	8.1	7.9	8.0	---	---	---
4	---	---	---	7.9	7.7	7.8	8.2	8.0	8.1	---	---	---
5	---	---	---	7.9	7.7	7.8	8.2	8.0	8.1	---	---	---
6	---	---	---	7.9	7.7	7.8	8.2	8.0	8.1	---	---	---
7	---	---	---	7.9	7.7	7.8	8.1	8.0	8.0	---	---	---
8	---	---	---	---	---	---	8.1	8.0	8.1	7.9	7.7	7.8
9	---	---	---	---	---	---	8.1	8.0	8.0	7.9	7.8	7.8
10	---	---	---	---	---	---	8.1	7.9	8.0	7.9	7.8	7.8
11	8.3	8.1	8.2	---	---	---	8.1	8.0	8.0	8.0	7.8	7.9
12	8.3	8.1	8.2	---	---	---	8.1	7.9	8.0	8.0	7.8	7.9
13	8.3	8.1	8.2	8.0	7.8	7.9	8.1	7.9	8.0	8.1	7.9	8.0
14	8.4	8.1	8.2	8.0	7.8	7.9	8.1	7.9	8.0	8.1	7.9	8.0
15	8.3	8.0	8.2	8.0	7.8	7.9	8.0	7.9	7.9	8.0	7.9	7.9
16	---	---	---	8.0	7.8	7.9	8.0	7.9	7.9	8.1	7.9	8.0
17	---	---	---	8.0	7.8	7.9	8.0	7.9	7.9	8.0	7.9	7.9
18	8.3	8.0	8.1	8.0	7.8	7.9	8.0	7.8	7.9	8.0	7.8	7.9
19	8.2	8.0	8.1	8.0	7.8	7.9	8.0	7.8	7.9	---	---	---
20	8.2	8.0	8.1	8.0	7.8	7.9	8.0	7.8	7.9	---	---	---
21	8.1	7.8	7.9	8.1	7.9	8.0	8.0	7.8	7.9	---	---	---
22	8.1	7.8	7.9	8.1	7.9	8.0	8.0	7.8	7.9	---	---	---
23	8.1	7.9	8.0	8.0	7.9	8.0	7.9	7.8	7.9	---	---	---
24	8.1	7.9	8.0	8.1	7.9	8.0	7.9	7.8	7.9	8.4	7.7	7.8
25	8.1	7.9	8.0	8.0	7.9	8.0	---	---	---	8.0	7.6	7.8
26	8.0	7.8	7.9	8.1	7.9	8.0	---	---	---	7.7	7.4	7.6
27	8.0	7.8	7.9	8.1	7.9	8.0	---	---	---	7.7	7.4	7.6
28	8.0	7.8	7.9	8.1	7.9	8.0	---	---	---	7.8	7.5	7.6
29	8.0	7.8	7.9	8.1	8.0	8.0	---	---	---	7.8	7.6	7.7
30	7.9	7.8	7.8	8.2	8.0	8.1	---	---	---	7.7	7.4	7.5
31	---	---	---	8.2	8.0	8.1	---	---	---	---	---	---
MONTH	8.4	7.8	8.0	8.2	7.7	7.9	8.2	7.8	8.0	8.4	7.4	7.8
YEAR	8.6	7.0	7.8									

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.5	18.0	18.0	15.0	14.0	14.5	11.0	11.0	11.0	---	---	---
2	18.5	18.0	18.5	15.5	14.0	14.5	11.0	11.0	11.0	---	---	---
3	18.5	18.0	18.5	15.0	14.0	14.5	11.5	11.0	11.0	---	---	---
4	19.0	18.5	18.5	14.5	14.0	14.5	11.5	11.0	11.0	---	---	---
5	19.0	18.5	18.5	14.0	12.5	13.5	11.5	11.0	11.0	---	---	---
6	19.5	18.5	19.0	13.5	13.0	13.5	11.5	11.0	11.0	6.5	6.5	6.5
7	19.5	19.0	19.0	13.5	13.0	13.0	11.0	10.5	11.0	6.5	6.5	6.5
8	19.5	19.0	19.0	13.5	13.0	13.0	10.5	10.5	10.5	6.5	6.5	6.5
9	19.5	19.0	19.0	13.5	13.0	13.0	10.5	10.0	10.5	6.5	6.5	6.5
10	19.0	18.5	19.0	13.0	13.0	13.0	10.0	10.0	10.0	7.0	6.5	6.5
11	18.5	18.5	18.5	13.0	13.0	13.0	10.0	10.0	10.0	6.5	6.5	6.5
12	18.5	18.5	18.5	13.0	13.0	13.0	---	---	---	8.0	6.0	6.5
13	18.5	18.0	18.5	13.0	12.0	12.5	---	---	---	6.5	6.0	6.0
14	18.5	18.0	18.0	12.5	12.0	12.0	---	---	---	6.5	6.0	6.0
15	18.0	17.5	17.5	12.0	11.5	12.0	---	---	---	6.5	6.0	6.0
16	17.5	16.5	17.0	12.0	11.5	11.5	---	---	---	6.0	6.0	6.0
17	17.0	16.5	16.5	11.5	11.5	11.5	---	---	---	6.0	5.5	6.0
18	16.5	16.0	16.5	12.0	11.5	11.5	---	---	---	5.5	5.5	5.5
19	16.5	16.0	16.5	11.5	11.5	11.5	---	---	---	5.5	5.0	5.5
20	16.5	16.0	16.5	11.5	11.5	11.5	---	---	---	5.5	5.0	5.5
21	16.5	16.0	16.0	12.0	11.5	11.5	---	---	---	5.5	5.5	5.5
22	16.0	15.5	16.0	11.5	11.5	11.5	---	---	---	5.5	5.5	5.5
23	15.5	15.5	15.5	12.0	11.5	12.0	---	---	---	5.5	5.5	5.5
24	15.5	15.0	15.5	12.0	11.0	11.5	---	---	---	5.5	5.0	5.5
25	15.0	15.0	15.0	11.0	11.0	11.0	---	---	---	5.0	5.0	5.0
26	15.0	14.5	14.5	11.0	11.0	11.0	---	---	---	5.0	5.0	5.0
27	15.0	14.5	14.5	11.0	11.0	11.0	---	---	---	5.0	5.0	5.0
28	14.5	14.5	14.5	11.0	10.5	11.0	---	---	---	5.0	5.0	5.0
29	14.5	14.0	14.5	12.0	10.5	11.0	---	---	---	5.0	5.0	5.0
30	14.5	14.0	14.0	12.5	11.0	11.0	---	---	---	5.0	5.0	5.0
31	14.5	14.0	14.0	---	---	---	---	---	---	5.0	5.0	5.0
MONTH	19.5	14.0	17.0	15.5	10.5	12.5	11.5	10.0	10.5	8.0	5.0	5.5

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.5	5.0	5.0	5.0	4.5	5.0	7.0	6.5	6.5	9.0	8.5	8.5
2	5.5	5.0	5.0	5.0	4.5	5.0	6.5	6.5	6.5	9.0	8.5	8.5
3	5.0	4.5	5.0	5.5	5.0	5.0	7.0	6.0	6.5	9.5	8.5	9.0
4	5.0	4.5	4.5	6.0	5.5	5.5	7.0	6.5	6.5	9.5	8.5	9.0
5	4.5	4.5	4.5	6.0	5.5	6.0	7.0	6.5	7.0	10.0	9.0	9.5
6	4.5	4.5	4.5	5.5	5.0	5.0	7.5	7.0	7.0	9.5	9.0	9.5
7	4.5	4.5	4.5	5.5	5.0	5.0	7.5	7.0	7.0	9.5	8.5	9.0
8	4.5	4.0	4.0	5.5	5.0	5.5	7.5	7.0	7.5	10.0	9.0	9.5
9	4.5	4.0	4.0	6.0	5.5	5.5	7.5	7.0	7.5	14.0	9.5	11.5
10	4.5	4.0	4.5	6.5	5.5	6.0	8.0	7.0	7.5	14.0	13.0	13.5
11	4.0	4.0	4.0	6.5	6.0	6.5	7.0	7.0	7.0	14.5	13.0	14.0
12	4.0	4.0	4.0	6.5	6.5	6.5	7.5	7.0	7.0	14.5	13.5	14.0
13	4.0	4.0	4.0	7.0	6.0	6.5	7.5	6.5	7.5	14.5	13.5	14.0
14	4.0	4.0	4.0	6.5	6.5	6.5	7.5	7.0	7.5	14.5	13.0	14.0
15	4.0	4.0	4.0	7.5	6.5	7.0	12.0	7.0	8.0	15.5	14.0	14.5
16	4.0	4.0	4.0	7.0	6.0	6.5	7.5	7.0	7.5	14.0	9.5	12.0
17	7.0	4.0	4.0	7.5	5.5	6.0	7.5	7.0	7.5	10.0	8.5	9.0
18	4.0	4.0	4.0	7.0	6.0	6.5	8.5	6.5	7.0	8.5	8.5	8.5
19	4.5	4.0	4.0	7.0	6.0	6.5	8.0	6.5	7.5	8.5	8.5	8.5
20	4.5	4.0	4.0	6.0	5.5	6.0	8.0	7.5	8.0	8.5	8.5	8.5
21	4.5	4.0	4.5	6.0	5.5	5.5	8.5	7.5	8.0	11.0	8.5	10.0
22	4.5	4.5	4.5	6.5	5.5	6.0	8.0	8.0	8.0	10.5	9.0	9.5
23	4.5	4.5	4.5	6.5	6.5	6.5	8.0	7.5	8.0	---	---	---
24	4.5	4.5	4.5	7.0	6.0	6.5	8.0	7.0	7.5	---	---	---
25	4.5	4.5	4.5	6.5	6.0	6.0	9.0	7.0	8.0	---	---	---
26	4.5	4.0	4.5	6.0	6.0	6.0	9.0	8.5	8.5	---	---	---
27	4.5	4.0	4.0	6.5	6.0	6.0	8.5	7.5	8.0	---	---	---
28	4.5	4.0	4.5	6.5	6.0	6.5	8.5	7.5	8.0	---	---	---
29	---	---	---	6.5	6.0	6.0	8.5	8.5	8.5	---	---	---
30	---	---	---	6.5	6.0	6.5	8.5	8.0	8.5	---	---	---
31	---	---	---	6.5	6.5	6.5	---	---	---	---	---	---
MONTH	7.0	4.0	4.5	7.5	4.5	6.0	12.0	6.0	7.5	15.5	8.5	10.5

		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	21.0	20.0	20.5	24.0	23.0	23.5	---	---	---
2	---	---	---	21.5	20.5	21.0	24.0	23.0	23.5	---	---	---
3	---	---	---	22.5	20.5	21.5	24.5	23.5	24.0	---	---	---
4	---	---	---	22.0	21.0	21.5	24.5	23.5	24.0	---	---	---
5	---	---	---	22.0	21.0	21.5	24.5	24.0	24.0	---	---	---
6	---	---	---	23.0	21.0	22.0	25.0	24.0	24.5	---	---	---
7	---	---	---	22.0	21.0	21.5	25.0	24.0	24.5	---	---	---
8	---	---	---	---	---	---	25.0	24.0	24.5	23.5	21.0	23.0
9	---	---	---	---	---	---	25.5	24.5	24.5	23.5	22.5	23.0
10	---	---	---	---	---	---	25.0	24.5	24.5	23.5	22.5	23.0
11	18.5	17.0	18.0	---	---	---	24.5	23.5	24.5	23.0	22.5	23.0
12	18.5	17.5	18.0	---	---	---	24.5	23.5	24.0	23.0	22.0	22.5
13	18.5	17.5	18.0	23.0	22.0	22.5	23.5	23.0	23.5	22.5	22.0	22.0
14	19.0	18.0	18.5	23.5	22.0	22.5	23.5	23.0	23.0	22.0	21.5	22.0
15	19.5	17.5	18.5	23.0	22.0	22.5	23.0	22.0	22.5	21.5	21.0	21.5
16	---	---	---	24.0	22.5	23.0	23.0	22.0	22.5	21.0	20.5	21.0
17	---	---	---	23.5	22.5	23.0	23.0	22.0	22.5	21.0	20.5	20.5
18	19.5	18.0	18.5	23.5	22.5	23.0	23.0	22.0	22.5	21.0	20.0	20.5
19	19.5	18.5	19.0	24.0	22.5	23.5	23.5	22.5	23.0	---	---	---
20	19.5	18.5	19.0	24.0	23.0	23.5	24.0	23.0	23.5	---	---	---
21	18.5	15.5	17.0	25.5	23.0	24.0	24.0	23.0	23.5	---	---	---
22	19.5	16.0	17.5	25.0	23.0	24.0	24.5	23.0	24.0	---	---	---
23	20.0	19.0	19.5	24.5	23.5	23.5	24.0	23.5	23.5	19.0	18.5	19.0
24	20.0	19.0	19.5	24.5	23.0	24.0	24.0	23.5	23.5	18.5	18.0	18.5
25	21.0	19.5	20.0	23.5	23.5	23.5	---	---	---	18.5	18.0	18.0
26	21.0	19.5	20.0	23.5	23.0	23.5	---	---	---	18.5	18.0	18.0
27	21.0	19.5	20.5	24.0	23.0	23.5	---	---	---	18.5	17.5	18.0
28	21.0	19.5	20.5	24.0	23.0	23.5	---	---	---	18.0	17.5	18.0
29	21.0	19.5	20.5	24.0	23.0	23.5	---	---	---	18.0	17.5	18.0
30	21.0	20.0	20.5	24.0	23.0	23.5	---	---	---	17.5	17.0	17.0
31	---	---	---	24.5	23.5	24.0	---	---	---	---	---	---
MONTH	21.0	15.5	19.0	25.5	20.0	23.0	25.5	22.0	23.5	23.5	17.0	20.5
YEAR	25.5	4.0	13.0									

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.3	8.8	9.0	11.4	11.0	11.1	10.7	10.4	10.5	---	---	---
2	9.2	8.8	9.0	11.5	11.0	11.3	10.8	10.4	10.6	---	---	---
3	9.3	8.8	9.0	11.7	11.1	11.4	10.8	10.4	10.6	---	---	---
4	9.3	8.9	9.0	11.5	11.0	11.4	10.7	10.4	10.5	---	---	---
5	9.1	8.3	8.7	11.7	11.1	11.4	10.6	10.4	10.5	---	---	---
6	8.6	8.0	8.3	---	---	---	10.6	10.4	10.5	11.9	11.7	11.7
7	8.5	7.9	8.2	---	---	---	10.8	10.4	10.6	11.8	11.7	11.7
8	8.5	8.0	8.2	---	---	---	10.9	10.6	10.7	12.0	11.8	11.8
9	8.6	8.0	8.2	---	---	---	10.8	10.6	10.7	12.0	11.8	11.9
10	8.5	8.2	8.4	---	---	---	10.8	10.6	10.7	11.9	11.6	11.7
11	8.7	8.5	8.6	---	---	---	10.8	10.6	10.6	11.8	11.6	11.7
12	9.0	8.6	8.7	---	---	---	---	---	---	11.9	10.7	11.7
13	9.0	8.7	8.8	---	---	---	---	---	---	11.9	11.8	11.8
14	9.2	8.7	8.9	---	---	---	---	---	---	11.9	11.6	11.8
15	9.3	8.8	9.0	---	---	---	---	---	---	11.8	11.6	11.7
16	9.4	9.0	9.2	---	---	---	---	---	---	11.9	11.7	11.7
17	9.6	9.3	9.4	---	---	---	---	---	---	11.8	11.6	11.7
18	9.7	9.2	9.4	---	---	---	---	---	---	12.0	11.8	11.8
19	9.4	9.0	9.2	---	---	---	---	---	---	12.3	11.8	12.0
20	9.8	8.4	9.0	---	---	---	---	---	---	12.4	12.2	12.3
21	9.6	8.1	8.6	---	---	---	---	---	---	12.4	12.2	12.3
22	9.2	7.8	8.6	---	---	---	---	---	---	12.4	12.1	12.2
23	9.3	7.9	8.6	10.6	10.1	10.3	---	---	---	12.2	12.0	12.1
24	9.6	8.5	9.0	10.6	10.1	10.3	---	---	---	12.4	12.0	12.2
25	10.0	9.5	9.7	10.8	10.4	10.5	---	---	---	12.7	12.2	12.5
26	10.1	8.9	9.6	10.7	10.4	10.6	---	---	---	12.8	12.5	12.6
27	9.8	9.2	9.6	10.8	10.5	10.6	---	---	---	12.6	12.5	12.5
28	10.1	9.9	10.0	10.6	10.4	10.5	---	---	---	12.6	12.4	12.5
29	10.5	10.2	10.3	10.5	9.7	10.3	---	---	---	12.6	12.4	12.5
30	10.7	10.5	10.6	10.7	9.8	10.4	---	---	---	12.4	12.4	12.4
31	11.1	10.8	10.9	---	---	---	---	---	---	12.6	12.4	12.4
MONTH	11.1	7.8	9.1	11.7	9.7	10.8	10.9	10.4	10.6	12.8	10.7	12.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.5	12.3	12.4	12.0	11.8	11.9	12.4	11.2	11.7	11.2	11.0	11.1
2	12.3	12.2	12.2	12.0	11.8	11.9	12.3	11.2	11.8	11.1	10.9	11.0
3	13.4	12.2	12.9	12.0	11.7	11.8	12.5	11.5	12.1	11.0	10.8	10.9
4	13.6	13.1	13.3	11.9	11.6	11.7	12.9	12.0	12.2	11.0	10.7	10.8
5	13.3	13.0	13.1	11.8	11.6	11.7	12.6	11.4	11.9	10.9	10.6	10.8
6	13.1	12.8	12.9	12.0	11.8	11.9	12.1	11.0	11.6	11.0	10.6	10.8
7	12.8	12.6	12.7	12.0	11.7	11.8	12.0	10.9	11.2	10.9	10.6	10.8
8	12.8	12.6	12.4	11.9	11.6	11.7	11.4	10.6	11.0	10.7	10.4	10.6
9	12.2	11.9	12.1	12.0	11.6	11.8	11.5	10.2	10.7	10.8	9.6	10.2
10	12.1	11.9	12.0	12.0	11.7	11.9	10.9	10.0	10.5	10.2	9.6	9.9
11	12.0	11.9	12.0	11.8	11.7	11.7	11.3	10.5	10.9	10.1	9.5	9.8
12	12.2	12.0	12.1	11.8	11.7	11.7	11.0	10.2	10.6	10.1	9.6	9.8
13	12.2	12.0	12.1	11.9	11.6	11.7	---	---	---	10.0	9.6	9.8
14	12.1	12.0	12.0	11.8	11.5	11.6	---	---	---	10.1	9.5	9.8
15	12.1	12.0	12.0	---	---	---	---	---	---	10.0	9.4	9.6
16	12.2	12.0	12.1	---	---	---	---	---	---	---	---	---
17	12.4	11.0	12.1	---	---	---	---	---	---	---	---	---
18	12.4	12.3	12.4	---	---	---	---	---	---	---	---	---
19	12.4	12.2	12.3	---	---	---	12.4	11.5	11.8	---	---	---
20	12.5	12.4	12.4	---	---	---	11.7	11.3	11.5	---	---	---
21	12.5	12.2	12.4	---	---	---	11.7	11.1	11.3	---	---	---
22	12.4	12.2	12.3	---	---	---	11.4	11.1	11.3	---	---	---
23	12.2	12.0	12.2	13.1	12.0	12.6	11.3	11.0	11.1	---	---	---
24	12.3	12.2	12.2	13.1	11.4	12.1	---	---	---	---	---	---
25	12.3	12.2	12.2	14.0	11.3	13.0	---	---	---	---	---	---
26	12.4	12.3	12.4	12.8	12.0	12.5	---	---	---	---	---	---
27	12.5	12.4	12.4	12.4	11.6	11.9	---	---	---	---	---	---
28	12.4	12.0	12.2	12.4	11.4	11.8	12.4	11.4	11.8	---	---	---
29	---	---	---	12.4	11.2	12.1	11.6	11.1	11.3	---	---	---
30	---	---	---	12.7	11.9	12.3	11.3	11.0	11.1	---	---	---
31	---	---	---	12.2	11.3	11.7	---	---	---	---	---	---
MONTH	13.6	11.0	12.4	14.0	11.2	12.0	12.9	10.0	11.4	11.2	9.4	10.4

02011800 JACKSON RIVER BELOW GATHRIGHT DAM, NEAR HOT SPRINGS, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	8.8	8.6	8.7	---	---	---	---	---	---
2	---	---	---	8.8	8.6	8.7	---	---	---	---	---	---
3	---	---	---	8.8	8.4	8.6	---	---	---	---	---	---
4	---	---	---	8.7	8.4	8.6	---	---	---	---	---	---
5	---	---	---	8.8	8.4	8.6	8.2	8.0	8.1	---	---	---
6	---	---	---	8.7	8.3	8.5	8.2	7.8	8.0	---	---	---
7	---	---	---	---	---	---	8.1	7.8	8.0	---	---	---
8	---	---	---	---	---	---	8.1	7.8	7.9	8.8	8.3	8.5
9	---	---	---	---	---	---	8.1	7.8	7.9	8.7	8.3	8.4
10	---	---	---	---	---	---	8.1	7.8	7.9	8.7	8.3	8.4
11	9.3	8.9	9.1	---	---	---	8.1	7.8	7.9	8.7	8.3	8.4
12	9.2	8.9	9.1	---	---	---	8.1	7.9	8.0	8.7	8.3	8.5
13	9.2	8.8	9.1	8.5	8.1	8.3	8.3	8.0	8.1	8.7	8.4	8.5
14	9.2	8.7	8.9	8.4	8.0	8.2	8.4	8.1	8.2	8.8	8.4	8.6
15	9.0	8.7	8.9	8.4	8.0	8.2	8.4	8.1	8.3	8.9	8.5	8.7
16	---	---	---	8.4	7.8	8.1	8.5	8.2	8.3	9.0	8.6	8.7
17	---	---	---	8.3	7.9	8.1	8.4	8.2	8.3	9.0	8.6	8.7
18	9.0	8.8	8.9	8.3	7.9	8.1	8.4	8.0	8.2	9.0	8.6	8.8
19	9.0	8.8	8.9	8.3	7.9	8.1	8.4	8.0	8.2	---	---	---
20	9.0	8.8	8.9	8.2	7.9	8.1	8.4	7.8	8.1	---	---	---
21	9.8	8.8	9.3	8.2	7.6	8.0	8.2	7.8	8.0	---	---	---
22	9.8	8.9	9.3	8.2	7.6	7.9	8.3	7.8	7.9	---	---	---
23	9.0	8.9	9.0	8.2	7.8	8.0	8.2	7.8	8.0	---	---	---
24	9.0	8.8	8.9	8.1	7.7	7.9	8.0	7.8	7.9	9.1	8.7	8.9
25	9.0	8.6	8.8	8.1	7.8	8.0	---	---	---	9.2	8.8	8.9
26	9.0	8.6	8.9	8.3	7.9	8.1	---	---	---	9.1	8.8	8.9
27	8.9	8.7	8.8	8.3	8.1	8.2	---	---	---	9.2	8.8	9.0
28	8.8	8.6	8.8	---	---	---	---	---	---	9.2	8.8	9.0
29	8.8	8.6	8.7	---	---	---	---	---	---	9.2	8.8	9.0
30	8.8	8.5	8.7	---	---	---	---	---	---	9.1	8.8	9.0
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	9.8	8.5	8.9	8.8	7.6	8.2	8.5	7.8	8.1	9.2	8.3	8.7
YEAR	14.0	7.6	10.3									

02012500 JACKSON RIVER AT FALLING SPRING, VA

LOCATION.--Lat 37°52'36", long 79°58'39", Alleghany County, Hydrologic Unit 02080201, on right bank 20 ft upstream from Smith Bridge, 0.8 mi south of town of Falling Spring, 1.6 mi downstream from Falling Spring Creek, and 5.5 mi north of Covington.

DRAINAGE AREA.--411 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1925 to current year. Prior to October 1934, published as "at Barber."

REVISED RECORDS.--WSP 952: 1927, 1928(M), 1929-30, 1932-40. WSP 1303: 1926(M), 1930-34(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,333.49 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 26, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795), 7.6 mi upstream.

AVERAGE DISCHARGE.--58 years, 490 ft³/s, 16.19 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s Mar. 17, 1936, gage height, 14.74 ft, from rating curve extended above 17,000 ft³/s on basis of records for other stations in James River basin; minimum, 36 ft³/s Oct. 12, 1946, July 15, 1981; minimum daily, 52 ft³/s Sept. 8, 1966; minimum gage height, 2.65 ft Oct. 12, 1946.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of about 20 ft, discharge, about 50,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,210 ft³/s Apr. 25, gage height, 9.10 ft; minimum, 42 ft³/s Nov. 2, gage height, 2.89 ft; minimum daily, 152 ft³/s Nov. 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	156	347	228	347	514	673	569	488	288	271	214
2	178	152	336	228	468	478	569	558	481	285	249	214
3	177	152	280	227	1670	398	1630	553	480	290	244	214
4	176	178	255	225	2010	323	2420	551	491	299	242	214
5	177	202	242	224	1320	320	1770	491	481	290	242	213
6	177	207	242	223	975	320	1080	402	475	285	240	213
7	177	198	231	223	685	325	920	324	471	284	241	213
8	176	192	222	222	534	389	856	321	417	282	240	190
9	183	189	215	222	494	697	801	316	327	281	241	231
10	190	186	211	223	427	951	1980	311	297	280	240	232
11	183	186	208	225	426	939	2900	260	295	279	244	233
12	181	188	212	200	421	903	2300	265	294	279	245	233
13	201	193	201	223	414	886	1430	264	291	280	240	233
14	210	190	197	223	414	782	1060	264	271	281	242	233
15	193	157	206	224	415	610	1320	265	261	280	208	233
16	187	186	1790	222	445	518	2540	802	291	279	219	231
17	184	184	2640	222	563	430	2540	2210	317	280	218	231
18	184	184	1250	205	836	487	1860	2680	309	281	220	231
19	178	182	1210	185	819	897	1080	1580	311	282	218	231
20	179	183	997	185	808	1150	841	1210	303	282	217	232
21	179	182	684	186	804	1980	660	1140	298	285	217	234
22	178	182	570	188	811	3160	560	1900	297	306	217	233
23	177	182	497	200	900	2550	567	2600	293	295	217	233
24	176	181	433	244	945	1530	2110	1780	291	332	218	233
25	234	181	430	456	925	994	4030	1080	288	303	219	232
26	250	180	427	540	902	903	4140	822	287	295	218	232
27	212	178	424	433	887	903	2220	628	286	291	216	231
28	198	212	344	411	703	859	1030	499	284	289	217	231
29	191	558	254	390	---	793	734	507	293	285	223	231
30	187	284	242	390	---	784	583	504	293	284	217	218
31	185	---	231	370	---	782	---	494	---	284	216	---
TOTAL	5843	5965	16028	8167	21368	27555	47203	26150	10261	8916	7116	6777
MEAN	188	199	517	263	763	889	1573	844	342	288	230	226
MAX	250	558	2640	540	2010	3160	4140	2680	491	332	271	234
MIN	176	152	197	185	347	320	560	260	261	279	208	190
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173
MEAN‡	143	335	772	267	745	893	1582	852	308	132	72.5	52.9
CFSM‡	.35	.82	1.88	.65	1.81	2.17	3.85	2.07	.75	.32	.18	.13
IN‡	.40	.91	2.17	.75	1.89	2.51	4.30	2.39	.84	.37	.20	.14

CAL YR 1982 TOTAL 205302 MEAN 562 MAX 5060 MIN 99 MEAN‡ 577 CFSM‡ 1.40 IN‡ 19.08
WTR YR 1983 TOTAL 191349 MEAN 524 MAX 4140 MIN 152 MEAN‡ 510 CFSM‡ 1.24 IN‡ 16.86

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02012500 JACKSON RIVER AT FALLING SPRING, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1968 to current year.
WATER TEMPERATURES: December 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 500 micromhos Oct. 2, 1970; minimum daily, 61 micromhos Dec. 21, 26, 1977.
WATER TEMPERATURES: Maximum daily, 29.5°C Aug. 2, 5, 1975; minimum daily, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 235 micromhos Nov. 30; minimum daily, 105 micromhos May 16.
WATER TEMPERATURES: Maximum daily, 27.0°C Aug. 8; minimum daily, 4.0°C Jan. 18-21.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 19...	1345	90	202	8.4	15.5	6	--	93	23	30	4.5	2.2
DEC 08...	1000	225	200	8.2	8.0	7	--	95	20	31	4.2	1.9
JAN 18...	1400	189	178	8.1	3.5	7	--	81	17	26	4.0	1.9
MAR 02...	0915	479	164	7.9	4.5	5	12.2	79	19	26	3.5	1.7
APR 20...	1155	870	140	8.0	9.0	5	--	64	11	21	2.8	1.7
JUN 22...	0900	297	168	7.9	17.0	15	9.2	74	16	24	3.5	2.0
JUL 26...	1415	293	168	8.5	24.0	18	8.5	77	14	25	3.6	1.7
SEP 08...	0950	214	185	7.9	21.0	1	8.4	87	18	28	4.2	2.0

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 19...	1.5	71	27	3.0	.10	3.5	121	115	.030	.15	.020	28
DEC 08...	1.3	75	21	2.4	<.10	5.0	108	112	<.010	.22	<.010	7
JAN 18...	1.7	65	22	2.2	.10	4.5	106	102	.010	.24	<.010	<3
MAR 02...	1.4	60	19	2.1	.20	4.2	110	95	.010	.26	.010	7
APR 20...	1.0	53	15	2.1	<.10	4.5	118	80	<.010	.24	<.010	9
JUN 22...	1.4	58	20	1.5	.10	3.7	94	92	<.010	.23	.420	6
JUL 26...	1.3	63	21	2.3	<.10	2.7	100	95	<.010	<.10	<.010	9
SEP 08...	1.4	69	21	2.1	.10	3.0	95	103	<.010	<.10	<.010	6

< Actual value is known to be less than the value shown.

02012500 JACKSON RIVER AT FALLING SPRING, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	197	197	190	170	170	165	160	150	153	178	190
2	183	185	206	193	196	170	155	155	150	150	176	189
3	155	187	209	190	145	178	145	158	150	153	180	189
4	190	201	210	190	150	180	145	158	150	165	179	188
5	193	211	206	190	164	190	155	148	150	170	180	190
6	190	196	210	187	163	190	160	160	150	168	181	190
7	193	193	208	185	163	178	160	170	150	160	181	189
8	195	192	207	185	167	195	155	170	158	158	179	202
9	197	190	206	165	163	175	165	165	160	150	180	185
10	195	188	202	190	168	165	160	168	162	160	180	180
11	200	187	202	185	---	153	140	180	165	163	185	180
12	190	185	202	210	---	160	140	175	162	150	181	180
13	200	196	215	183	165	150	160	165	170	140	180	180
14	220	189	213	185	163	165	145	170	170	160	201	181
15	210	197	200	190	162	175	180	150	172	162	200	182
16	210	189	155	187	160	145	135	105	165	160	181	180
17	200	191	160	183	158	160	140	120	178	170	180	183
18	180	191	163	190	157	163	143	125	175	160	181	182
19	215	190	165	185	163	170	145	130	170	165	180	181
20	190	192	170	190	158	145	143	130	170	165	180	182
21	180	174	173	195	157	155	160	133	172	162	180	180
22	197	188	175	195	158	150	120	120	170	181	181	191
23	165	191	180	180	159	148	---	123	168	198	180	196
24	195	192	175	158	159	160	130	125	165	182	182	198
25	185	191	175	159	158	160	120	130	162	180	181	190
26	210	192	170	162	163	160	123	140	162	180	183	192
27	210	192	170	162	165	168	125	140	161	160	182	190
28	207	197	178	165	165	165	140	155	170	173	182	190
29	205	211	160	167	---	150	150	158	165	170	200	188
30	200	235	195	169	---	140	153	155	165	170	190	199
31	197	---	190	171	---	165	---	150	---	170	192	---
MEAN	194	194	189	182	162	164	147	148	163	165	183	187

WTR YR 1983 MEAN 173 MAX 235 MIN 105

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	16.0	12.0	7.5	7.0	7.0	10.0	12.0	13.0	22.5	25.0	25.5
2	20.0	16.0	13.0	7.0	7.0	8.0	8.0	12.0	18.0	23.0	25.0	23.5
3	20.5	15.5	14.0	7.5	5.0	9.5	7.0	11.5	16.5	23.5	24.5	24.0
4	20.5	14.0	14.0	6.5	5.0	10.0	8.0	11.0	17.0	25.0	26.5	24.0
5	20.5	11.5	13.5	7.0	5.0	9.5	8.5	14.0	19.0	23.0	24.0	25.0
6	21.0	11.5	12.0	6.0	5.0	10.0	10.0	14.5	19.5	24.5	25.0	25.0
7	20.5	12.0	11.0	7.0	5.0	10.0	9.5	14.0	18.0	24.0	24.5	24.5
8	20.0	12.5	10.0	6.0	6.0	8.5	9.5	11.0	20.0	24.0	27.0	25.0
9	20.0	13.0	10.0	6.0	4.5	7.5	9.0	14.0	20.0	24.5	25.0	25.0
10	18.5	13.5	8.0	7.0	5.0	6.5	7.5	17.0	21.0	22.5	26.0	23.5
11	17.0	13.0	7.5	7.5	---	7.0	7.5	18.0	20.0	25.0	25.5	24.0
12	19.0	14.0	7.5	5.5	---	7.5	9.0	18.0	19.0	25.0	24.0	24.0
13	18.0	11.0	6.5	6.0	5.0	8.0	10.5	17.0	22.0	25.5	24.5	22.0
14	16.0	10.0	7.0	6.5	5.0	8.0	8.0	15.5	21.0	25.5	24.5	22.0
15	17.5	10.5	7.0	5.5	5.0	11.0	11.0	16.0	22.5	25.0	25.0	22.0
16	15.0	11.0	8.0	5.0	5.0	9.5	8.0	14.0	23.0	26.0	24.0	21.0
17	15.5	11.0	9.0	5.0	6.5	7.5	8.5	10.5	22.0	23.5	24.5	21.0
18	15.0	12.0	8.5	4.0	6.5	8.0	8.0	11.0	21.0	24.0	25.0	22.0
19	16.5	11.0	8.5	4.0	7.0	9.0	9.0	10.0	21.0	26.0	25.5	22.0
20	17.0	11.5	8.0	4.0	7.0	9.0	11.0	12.0	21.5	26.0	26.0	22.0
21	17.0	12.0	7.5	4.0	7.5	7.5	11.5	12.0	21.5	26.5	26.0	20.5
22	15.0	13.0	8.5	4.5	7.0	6.5	12.0	12.0	18.0	25.5	26.0	19.5
23	12.5	14.0	8.5	6.0	6.5	7.5	---	12.0	21.0	26.0	25.5	18.0
24	13.0	11.0	8.0	6.0	6.0	7.0	8.5	12.5	20.5	25.0	23.5	17.5
25	12.5	10.5	10.0	6.0	5.0	8.5	9.0	14.0	23.0	23.0	24.0	18.5
26	14.0	10.5	9.5	6.0	5.5	8.5	10.5	14.0	22.5	25.5	25.5	19.0
27	14.5	11.5	9.0	6.0	6.5	6.5	12.0	15.0	21.0	26.0	25.0	19.5
28	14.5	11.0	9.5	7.0	7.0	7.0	13.0	13.0	22.0	25.5	25.0	18.5
29	14.5	12.0	8.5	6.0	---	7.5	12.0	14.0	21.0	26.0	25.0	18.0
30	14.5	12.5	7.0	6.0	---	8.5	12.5	14.0	21.0	26.0	25.5	15.5
31	15.5	---	7.5	7.0	---	7.0	---	14.0	---	26.5	24.5	---
MEAN	17.0	12.5	9.5	6.0	6.0	8.0	9.5	13.5	20.0	25.0	25.0	21.5

WTR YR 1983 MEAN 14.5 MAX 27.0 MIN 4.0

02012800 JACKSON RIVER AT FILTRATION PLANT, AT COVINGTON, VA

LOCATION.--Lat 37°48'39", long 79°59'19", Covington City, Hydrologic Unit 02080201, on left bank 250 ft upstream from Dry Run and 1.7 mi upstream from Dunlap Creek and bridge on U.S. Highway 60.

DRAINAGE AREA.--439 mi².

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Temperature recorder since June 1978.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum recorded, 30.5°C July 21, 1980; minimum recorded, 0.0°C Jan. 13, 1982.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum recorded, 28.5°C Aug. 21; minimum recorded, 0.5°C Jan. 19, 20.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.5	16.0	17.0	14.5	12.5	13.5	11.0	10.0	10.5	6.5	5.5	6.0
2	20.0	16.5	17.5	15.0	12.5	13.5	11.5	10.5	11.0	6.5	6.0	6.0
3	20.5	17.5	19.0	14.5	13.0	14.0	12.5	11.0	12.0	7.5	6.0	6.5
4	21.0	18.0	19.5	14.5	12.5	14.0	13.0	12.0	12.5	6.0	4.0	4.5
5	21.0	18.5	19.5	12.5	9.0	10.5	12.0	11.5	12.0	5.5	3.0	4.5
6	21.0	18.5	19.5	9.5	7.5	8.5	12.0	11.0	11.5	5.5	4.5	4.5
7	20.0	18.5	19.5	9.5	7.5	8.5	10.5	8.5	9.5	5.5	4.0	4.5
8	19.5	18.0	18.5	10.5	7.5	9.0	8.5	7.0	8.0	6.0	5.0	5.5
9	20.0	18.0	19.0	11.0	9.0	10.0	7.5	6.5	7.0	6.0	5.5	6.0
10	19.0	17.0	18.0	11.5	9.5	10.5	6.5	5.0	6.0	7.5	6.0	6.5
11	16.5	15.5	16.0	11.5	10.0	11.0	7.5	6.0	7.0	8.0	7.0	7.5
12	17.5	15.5	16.5	13.0	11.0	12.0	7.0	4.5	6.0	7.0	4.0	6.0
13	17.0	16.0	17.0	12.5	9.0	11.0	4.5	2.5	3.5	4.5	3.0	4.0
14	16.0	14.5	15.5	8.5	7.0	7.5	4.0	2.0	3.0	5.5	3.5	4.5
15	16.0	13.5	15.0	9.0	7.0	7.5	5.0	3.5	4.0	6.0	4.5	5.5
16	15.0	12.5	14.0	7.5	6.0	6.5	8.5	5.0	6.5	4.5	3.0	3.5
17	13.5	11.0	12.0	7.0	6.5	7.0	9.0	7.5	8.5	4.0	3.0	3.5
18	13.0	11.0	12.0	9.0	7.0	8.0	8.0	7.0	7.5	3.0	1.5	2.5
19	15.0	12.0	13.5	10.5	9.0	10.0	7.5	7.0	7.5	2.0	.5	1.0
20	15.5	13.0	14.5	11.0	10.5	10.5	7.5	7.5	7.5	2.0	.5	1.0
21	16.0	13.5	14.5	12.0	10.5	11.5	7.5	6.5	7.0	3.0	1.5	2.5
22	14.0	12.0	13.0	12.5	11.5	12.0	7.0	5.5	6.5	4.5	3.0	3.5
23	12.5	11.0	11.5	13.0	12.0	12.5	7.5	6.5	7.0	5.5	4.5	5.0
24	11.0	10.0	10.5	12.5	9.0	11.5	8.0	6.5	7.5	5.5	5.0	5.0
25	10.5	9.5	10.0	9.0	7.0	7.5	9.5	8.5	9.0	5.0	5.0	5.0
26	12.0	9.5	11.0	8.5	6.5	7.5	9.5	9.0	9.5	6.0	4.5	5.5
27	12.5	10.5	11.5	10.5	8.5	9.5	9.5	9.0	9.5	6.0	4.5	5.5
28	13.0	10.5	11.5	9.0	7.5	8.5	9.5	9.0	9.5	6.0	4.5	5.5
29	13.0	11.0	12.0	9.5	7.5	8.5	9.5	7.5	9.0	6.0	4.0	5.0
30	13.5	11.0	12.0	10.0	9.0	9.5	7.5	5.5	6.0	6.0	5.5	6.0
31	14.5	12.0	13.0	---	---	---	6.5	5.5	5.5	6.5	5.0	6.0
MONTH	21.0	9.5	15.0	15.0	6.0	10.0	13.0	2.0	8.0	8.0	.5	5.0

02012800 JACKSON RIVER AT FILTRATION PLANT, AT COVINGTON, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.5	4.5	5.5							---	---	---
2	7.5	6.5	7.0							---	---	---
3	6.5	5.0	6.0							---	---	---
4	5.5	4.5	5.0							---	---	---
5	5.5	4.0	4.5							---	---	---
6	4.5	4.5	4.5							---	---	---
7	5.5	4.5	5.0							---	---	---
8	5.0	3.5	4.5							---	---	---
9	4.5	2.5	3.5							---	---	---
10	4.5	3.5	4.5							---	---	---
11	3.5	2.0	2.5							---	---	---
12	4.5	2.5	3.5							---	---	---
13	4.5	2.5	4.0							---	---	---
14	4.5	3.5	4.0							---	---	---
15	5.5	2.5	4.0							---	---	---
16	6.0	4.0	5.0							---	---	---
17	7.0	4.0	5.5							---	---	---
18	6.0	4.0	5.5							---	---	---
19	6.5	4.0	5.5							---	---	---
20	6.5	4.0	5.5							---	---	---
21	7.0	4.0	5.5							---	---	---
22	7.0	4.5	6.0							---	---	---
23	6.5	5.5	6.0							---	---	---
24	6.5	4.5	5.5							---	---	---
25	5.5	4.5	5.0							---	---	---
26	6.0	3.0	4.5							14.5	11.0	12.5
27	6.0	3.0	4.5							15.0	11.0	13.0
28	6.0	3.5	5.0							14.5	11.5	12.5
29	---	---	---							13.5	12.5	12.5
30	---	---	---							16.0	12.5	14.0
31	---	---	---							15.5	12.5	13.5
MONTH	7.5	2.0	5.0							16.0	11.0	13.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.5	11.5	12.5	24.0	20.5	22.5	24.5	23.5	24.0	25.5	22.0	23.5
2	17.5	12.5	15.0	26.0	22.0	24.0	26.0	23.0	24.5	23.5	22.0	23.0
3	17.5	15.5	16.0	26.0	23.5	24.0	26.5	23.5	24.5	24.0	20.5	22.0
4	17.0	15.5	16.0	25.5	22.5	23.5	26.5	23.5	24.5	23.5	21.5	22.5
5	19.5	15.5	17.5	23.5	22.0	23.0	26.0	23.5	24.5	24.0	21.5	22.5
6	19.0	16.0	18.0	24.0	20.5	22.0	26.5	24.0	25.0	25.5	22.0	23.5
7	19.0	16.5	17.5	23.5	20.0	22.0	26.5	23.5	25.0	24.5	22.5	23.5
8	19.5	16.0	17.5	24.0	20.5	22.5	26.5	24.0	25.0	25.0	21.5	23.0
9	20.0	17.0	18.5	24.0	21.0	23.0	27.0	24.0	25.0	24.0	21.0	22.5
10	21.0	17.5	19.0	24.0	22.0	23.0	26.0	23.5	24.5	24.0	20.0	22.0
11	22.0	18.5	20.5	24.0	21.0	23.0	25.0	23.0	24.0	23.5	20.5	22.0
12	22.5	19.5	21.0	24.0	21.5	23.0	24.0	22.0	23.0	24.0	21.5	22.5
13	23.0	19.5	21.0	25.5	23.0	24.0	23.5	20.5	22.0	22.5	21.0	22.0
14	22.0	20.0	21.0	25.5	23.0	24.5	23.5	21.0	22.0	22.5	20.0	21.0
15	23.5	20.0	21.5	25.0	23.0	24.0	24.0	20.5	22.0	21.5	18.5	20.0
16	24.0	21.0	22.0	25.5	23.5	24.5	25.0	21.5	23.0	20.0	18.0	19.0
17	20.5	19.0	20.0	25.5	23.5	24.5	25.5	21.5	23.5	21.0	18.0	19.5
18	21.0	19.0	20.5	24.0	23.0	23.5	25.5	23.0	24.0	21.5	17.5	19.5
19	21.0	20.0	20.5	26.0	23.0	24.5	26.0	23.0	24.5	22.5	19.0	20.5
20	22.0	20.0	21.0	26.0	24.0	25.0	27.0	23.0	25.0	22.5	19.5	21.0
21	22.0	20.5	21.0	26.5	24.0	25.5	28.5	24.0	26.0	21.0	18.0	20.5
22	21.0	18.0	19.0	26.0	24.0	25.0	27.0	24.0	25.5	18.0	16.0	17.0
23	23.0	17.5	20.0	25.5	24.0	24.5	26.5	24.0	25.0	16.5	14.5	15.5
24	24.0	20.5	22.5	26.0	23.0	24.0	25.0	23.0	24.0	16.5	13.5	14.5
25	24.5	21.5	23.0	24.0	22.0	23.0	24.0	22.0	23.0	17.0	14.0	15.0
26	24.0	20.5	22.5	24.0	20.5	22.5	24.5	21.5	23.0	17.5	15.0	16.0
27	24.0	21.5	23.0	25.5	23.0	24.0	25.5	23.0	24.0	18.5	15.5	16.5
28	24.0	22.5	23.0	25.0	23.0	24.0	26.0	23.0	24.0	17.5	15.5	16.5
29	23.0	21.5	22.0	25.5	23.0	24.0	26.0	23.5	24.0	17.0	15.5	16.5
30	21.5	20.5	21.0	26.0	23.0	24.5	25.5	22.0	23.5	15.5	14.0	14.5
31	---	---	---	26.0	23.5	24.5	25.0	22.5	23.5	---	---	---
MONTH	24.5	11.5	20.0	26.5	20.0	23.5	28.5	20.5	24.0	25.5	13.5	20.0
YEAR	28.5	.5	14.5									

02013000 DUNLAP CREEK NEAR COVINGTON, VA

LOCATION.--Lat 37°48'10", long 80°02'50", Alleghany County, Hydrologic Unit 02080201, on right bank 20 ft downstream from bridge on U.S. Highway 60, 2.2 mi downstream from Ogle Creek, and 3.0 mi west of Covington.

DRAINAGE AREA.--164 mi².

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1929-30, 1932-34, 1942. WSP 1303: 1929-35(M), 1937-38(M), 1941-48(M). WSP 2104: Drainage area. WDR VA-74-1: 1969(M), 1972, 1973(P).

GAGE.--Water-stage recorder. Datum of gage is 1,294.70 ft National Geodetic Vertical Datum of 1929. Prior to Dec. 8, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good. Occasional diurnal fluctuation caused by dam 7.9 mi above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--55 years, 166 ft³/s, 13.75 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft³/s June 21, 1972, gage height, 15.65 ft, from rating curve extended above 4,500 ft³/s on basis of step-backwater computations and contracted-opening measurement at gage height 15.65 ft; minimum, 2.0 ft³/s July 4, 1970; minimum daily, 7.0 ft³/s Sept. 9, 1966; minimum gage height, 0.69 ft June 6, July 14, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 18 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Nov. 29	0830	2250	5.61	Apr. 10	0930	4860	8.17
Dec. 16	1300	2580	5.98	Apr. 24	1230	3080	6.48
Mar. 19	0530	*5080	8.33				

Minimum discharge, 9.6 ft³/s Sept. 19; minimum daily, 10 ft³/s Sept. 11, 12, 18-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	30	374	72	97	179	186	187	103	42	22	13
2	19	28	486	68	322	160	222	167	94	37	22	12
3	18	27	275	65	713	138	966	156	86	34	21	12
4	18	31	188	60	385	121	569	155	126	36	20	12
5	17	42	144	55	254	110	392	133	121	36	19	12
6	17	47	124	52	206	108	316	116	106	34	18	12
7	17	41	103	51	176	110	290	105	94	31	18	11
8	17	36	86	49	145	117	299	99	84	29	17	11
9	19	33	75	47	118	178	369	96	74	27	16	11
10	23	30	68	46	114	282	3370	88	66	26	16	13
11	22	29	64	48	108	349	1210	82	62	25	21	10
12	22	29	72	47	105	296	622	78	56	24	36	10
13	32	32	62	43	91	236	426	75	51	23	28	11
14	43	37	54	42	89	196	330	77	49	23	22	11
15	38	35	54	46	98	169	540	79	56	22	20	11
16	31	33	1390	45	218	144	661	588	67	21	19	11
17	27	31	812	42	483	126	479	709	184	20	17	11
18	25	30	386	40	617	732	371	345	113	20	17	10
19	23	29	262	35	475	3250	300	250	94	20	17	10
20	22	29	200	36	400	956	241	247	81	20	16	10
21	22	29	154	37	364	1160	200	332	69	19	15	11
22	21	29	120	40	393	879	171	546	61	26	14	12
23	21	31	104	48	559	516	163	425	55	31	14	11
24	20	34	96	84	542	370	2420	312	48	82	14	11
25	68	38	98	106	377	292	1180	234	44	70	15	11
26	154	38	101	105	276	227	599	188	40	44	14	11
27	84	37	97	98	221	209	404	153	37	35	14	11
28	57	62	93	94	194	223	311	128	35	30	14	11
29	45	1330	91	94	---	209	254	136	40	27	14	11
30	38	404	85	96	---	196	214	130	46	25	13	12
31	33	---	77	99	---	197	---	115	---	23	13	---
TOTAL	1033	2691	6395	1890	8140	12435	18075	6531	2242	962	556	336
MEAN	33.3	89.7	206	61.0	291	401	603	211	74.7	31.0	17.9	11.2
MAX	154	1330	1390	106	713	3250	3370	709	184	82	36	13
MIN	17	27	54	35	89	108	163	75	35	19	13	10
CFSM	.20	.55	1.26	.37	1.77	2.45	3.68	1.29	.46	.19	.11	.07
IN.	.23	.61	1.45	.43	1.85	2.82	4.10	1.48	.51	.22	.13	.08

CAL YR 1982 TOTAL 66090 MEAN 181 MAX 4780 MIN 13 CFSM 1.10 IN 14.99
WTR YR 1983 TOTAL 61286 MEAN 168 MAX 3370 MIN 10 CFSM 1.02 IN 13.90

02013100 JACKSON RIVER BELOW DUNLAP CREEK, AT COVINGTON, VA

LOCATION.--Lat 37°47'19", long 80°00'03", Covington City, Hydrologic Unit 02080201, on left bank in city recreation park and 0.5 mi downstream from Dunlap Creek.

DRAINAGE AREA.--614 mi².

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR VA-76-1: 1975(M).

GAGE.--Water-stage recorder. Datum of gage is 1,206.50 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diurnal fluctuation at low flow caused by Westvaco plant 0.8 mi upstream and occasionally by dam on Dunlap Creek 12.7 mi upstream. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 19.9 mi upstream. Diversion by Westvaco plant averages 47 ft³/s for industrial use of which approximately 42 ft³/s is returned above station. Diversion 2.0 mi above station for city of Covington water supply averages less than 4.0 ft³/s. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 723 ft³/s, 15.99 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft³/s Apr. 5, 1977, gage height, 19.85 ft; minimum, 41 ft³/s Jan. 5, 1981, gage height, 4.38 ft, result of freezeup; minimum daily, 67 ft³/s Sept. 3, 27-29, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 24.36 ft, discharge, about 34,000 ft³/s, from floodmarks, and flood of Dec. 27, 1973, reached a stage of 22.09 ft, from floodmarks, discharge, about 28,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,760 ft³/s Apr. 10, gage height, 10.48 ft; minimum, 114 ft³/s Nov. 3, gage height, 4.56 ft; minimum daily, 198 ft³/s Nov. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	230	809	321	468	787	980	840	639	336	329	259
2	209	200	1000	318	769	713	842	801	620	329	295	259
3	209	198	673	316	2260	627	2520	781	612	331	310	255
4	208	222	523	305	2630	492	3110	777	671	347	299	255
5	208	269	449	299	1730	474	2410	700	655	335	286	261
6	207	256	420	297	1330	473	1560	581	628	329	286	240
7	209	257	383	294	998	480	1340	462	610	323	287	246
8	208	245	350	292	761	531	1300	452	562	320	288	221
9	227	238	331	288	702	877	1280	441	438	316	284	257
10	240	231	319	289	603	1320	5270	426	387	310	286	268
11	223	228	311	289	604	1400	4310	377	377	310	304	273
12	219	228	332	266	584	1310	3170	360	364	310	322	273
13	245	235	301	281	555	1220	2110	358	356	309	303	279
14	268	239	287	277	555	1090	1530	365	339	309	299	279
15	246	230	285	285	562	885	1870	364	323	311	267	273
16	231	212	2800	281	729	745	3340	1310	357	309	268	273
17	224	229	3990	276	1130	627	3140	2870	619	310	265	273
18	219	229	1810	268	1620	1090	2500	3220	478	311	271	273
19	202	226	1610	231	1440	4030	1550	2020	435	311	271	273
20	213	229	1370	236	1340	2270	1230	1570	407	310	269	273
21	216	228	972	243	1290	3020	986	1610	386	313	267	279
22	214	230	776	243	1320	4240	813	2400	372	342	271	268
23	213	228	696	261	1550	3300	808	3130	360	343	271	273
24	214	229	593	329	1630	2140	4290	2370	349	432	276	273
25	334	230	580	517	1430	1430	4950	1450	341	400	274	273
26	459	230	581	729	1290	1240	4880	1140	337	357	270	273
27	322	228	574	569	1210	1210	3000	888	332	343	271	273
28	272	265	511	548	1040	1200	1530	691	323	334	278	262
29	251	2040	372	515	---	1100	1140	713	339	328	280	268
30	240	881	357	517	---	1070	891	697	346	325	270	273
31	235	---	328	503	---	1070	---	662	---	329	265	---
TOTAL	7401	9420	24693	10683	32130	42461	68650	34826	13362	10222	8782	7978
MEAN	239	314	797	345	1148	1370	2288	1123	445	330	283	266
MAX	459	2040	3990	729	2630	4240	5270	3220	671	432	329	279
MIN	202	198	285	231	468	473	808	358	323	309	265	221
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173
MEAN‡	194	450	1052	349	1130	1374	2297	1131	411	174	126	92.9
CFSM‡	.32	.73	1.71	.57	1.84	2.24	3.74	1.84	.67	.28	.21	.15
IN‡	.36	.82	1.97	.65	1.92	2.58	4.18	2.13	.75	.33	.24	.17

CAL YR 1982 TOTAL 283968 MEAN 778 MAX 6950 MIN 184 MEAN‡ 793 CFSM‡ 1.29 IN‡ 17.54
WTR YR 1983 TOTAL 270608 MEAN 741 MAX 5270 MIN 198 MEAN‡ 727 CFSM‡ 1.18 IN‡ 16.09

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02014000 POTTS CREEK NEAR COVINGTON, VA

LOCATION.--Lat 37°43'44", long 80°02'33", Alleghany County, Hydrologic Unit 02080201, on left bank at downstream side of bridge on State Highway 18, 0.8 mi downstream from Blue Spring Creek, and 5.2 mi southwest of Covington.

DRAINAGE AREA.--153 mi^2.

PERIOD OF RECORD.--October 1928 to September 1956, October 1965 to current year.

REVISED RECORDS.--WSP 1723: 1935, 1936(M), 1940(M), 1942(M), 1948-49(M), 1951-52(M), 1954(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,273.93 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1956, nonrecording gage at site 1.3 mi downstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, June 2 to July 1, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--46 years, 179 ft^3/s, 15.89 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft^3/s June 21, 1972, gage height, 12.33 ft; minimum observed, 13 ft^3/s Nov. 29, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1530	2690	6.77	Apr. 10	1200	2790	6.87
Mar. 19	0400	*4040	8.01				

Minimum daily discharge, 19 ft^3/s Sept. 10-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	36	507	96	109	255	226	273	171	68	38	23
2	23	34	481	90	238	226	257	242	160	62	39	22
3	24	33	325	89	686	193	856	222	150	64	37	22
4	24	43	245	85	487	168	599	217	160	62	36	22
5	25	61	192	79	367	154	465	185	150	65	34	22
6	25	58	216	76	313	157	390	159	130	72	32	22
7	25	49	189	73	278	188	370	143	120	62	32	21
8	26	44	155	70	238	222	348	136	110	56	30	21
9	30	41	137	66	220	304	357	130	100	52	28	20
10	33	38	122	66	200	369	2190	119	90	48	26	19
11	36	37	113	71	190	389	1280	112	80	47	31	19
12	36	39	123	71	180	338	787	106	75	45	50	19
13	54	53	105	66	160	288	571	102	68	40	35	20
14	65	60	86	63	140	251	458	103	60	38	31	20
15	50	54	98	69	145	221	697	102	60	35	28	20
16	41	49	1470	68	170	192	698	182	75	33	27	20
17	34	45	1130	55	250	171	549	271	70	32	26	20
18	35	44	636	50	520	1120	462	211	70	31	26	20
19	30	43	452	43	460	2840	395	193	80	32	25	20
20	30	45	357	50	410	1170	327	207	75	33	24	20
21	32	45	280	54	360	1320	276	230	80	32	23	23
22	30	49	213	59	379	1020	236	331	75	62	24	24
23	30	67	174	77	507	689	239	312	80	60	23	25
24	30	76	152	127	591	529	1840	266	75	137	24	24
25	114	69	145	121	516	428	1280	221	74	101	25	24
26	167	65	138	109	405	337	800	191	70	69	24	24
27	83	61	131	105	323	304	574	160	65	57	24	25
28	59	100	122	102	280	320	458	142	60	49	25	25
29	48	929	119	100	---	274	376	183	55	43	24	25
30	42	466	111	104	---	244	314	255	75	40	25	28
31	37	---	102	108	---	239	---	201	---	37	24	---
TOTAL	1341	2833	8826	2462	9122	14920	18675	5907	2763	1664	900	659
MEAN	43.3	94.4	285	79.4	326	481	623	191	92.1	53.7	29.0	22.0
MAX	167	929	1470	127	686	2840	2190	331	171	137	50	28
MIN	23	33	86	43	109	154	226	102	55	31	23	19
CFSM	.28	.62	1.86	.52	2.13	3.14	4.07	1.25	.60	.35	.19	.14
IN.	.33	.69	2.15	.60	2.22	3.63	4.54	1.44	.67	.40	.22	.16

CAL YR 1982 TOTAL 65576 MEAN 180 MAX 3540 MIN 22 CFSM 1.18 IN 15.94
WTR YR 1983 TOTAL 70072 MEAN 192 MAX 2840 MIN 19 CFSM 1.26 IN 17.04

02015700 BULLPASTURE RIVER AT WILLIAMSVILLE, VA

LOCATION.--Lat 38°11'43", long 79°34'14", Bath County, Hydrologic Unit 02080201, on left bank 15 ft downstream from bridge on State Highway 614 at Williamsville and 0.62 mi upstream from mouth.

DRAINAGE AREA.--110 mi².

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,610.14 ft National Geodetic Vertical Datum of 1929. Prior to July 12, 1974, at site 700 ft upstream at datum 11.84 ft higher.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--23 years, 146 ft³/s, 18.02 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,430 ft³/s Apr. 5, 1977, from rating curve extended above 3,300 ft³/s; maximum gage height, 10.84 ft Dec. 26, 1973, from floodmarks; minimum discharge, 19 ft³/s Jan. 4, 1981, result of freezeup; minimum daily, 23 ft³/s Sept. 8, 9, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0830	2910	6.20	Apr. 24	1000	3270	6.44
Apr. 10	0730	2720	6.07	May 21	1500	2520	5.94
Apr. 15	1130	*3460	6.56				

Minimum discharge, 29 ft³/s Sept. 13, 29, 30, gage height, 2.50 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	40	322	83	88	134	208	200	159	60	33	36
2	32	39	293	81	560	124	259	180	141	62	34	33
3	32	39	204	80	725	116	772	169	134	52	36	33
4	30	51	165	72	377	105	444	167	183	56	38	33
5	32	83	139	69	248	99	312	146	141	56	36	33
6	74	66	201	72	208	105	262	132	127	52	41	32
7	43	55	160	72	186	134	242	122	120	47	37	32
8	36	48	132	70	162	332	262	118	109	46	36	31
9	35	45	121	67	136	568	262	114	99	46	34	31
10	40	42	108	70	134	382	1570	103	96	44	33	31
11	40	41	102	88	116	282	829	97	92	44	33	30
12	37	43	99	81	113	228	501	96	87	44	44	31
13	51	67	81	72	107	197	348	92	85	42	36	32
14	79	57	78	72	109	172	278	90	88	41	34	36
15	54	53	78	72	107	156	1780	99	92	40	34	31
16	46	48	1960	69	141	136	1090	754	92	40	33	30
17	41	46	625	62	211	127	632	618	99	40	33	31
18	37	45	328	55	245	134	437	322	88	39	34	31
19	36	43	242	45	222	484	328	252	118	40	34	31
20	35	45	200	51	203	302	266	255	103	40	33	30
21	35	47	169	58	194	726	225	1050	87	42	32	32
22	35	48	136	61	200	527	194	930	80	52	31	38
23	33	53	127	98	231	343	189	547	75	45	31	33
24	33	54	122	141	235	266	2210	353	69	46	32	32
25	45	51	114	112	206	225	1120	270	66	44	33	32
26	81	47	109	103	167	189	610	228	60	40	34	32
27	58	47	103	97	141	324	406	194	56	39	33	32
28	48	66	101	96	136	437	307	169	52	38	34	30
29	45	776	99	90	---	294	255	189	52	38	38	30
30	42	284	90	92	---	245	220	238	61	37	32	32
31	41	---	87	92	---	228	---	180	---	33	32	---
TOTAL	1339	2469	6895	2443	5908	8121	16818	8474	2911	1385	1068	961
MEAN	43.2	82.3	222	78.8	211	262	561	273	97.0	44.7	34.5	32.0
MAX	81	776	1960	141	725	726	2210	1050	183	62	44	38
MIN	30	39	78	45	88	99	189	90	52	33	31	30
CFSM	.39	.75	2.02	.72	1.92	2.38	5.10	2.48	.88	.41	.31	.29
IN.	.45	.83	2.33	.83	2.00	2.75	5.69	2.87	.98	.47	.36	.32

CAL YR 1982 TOTAL 68028 MEAN 186 MAX 3650 MIN 29 CFSM 1.69 IN 23.01
WTR YR 1983 TOTAL 58792 MEAN 161 MAX 2210 MIN 30 CFSM 1.46 IN 19.88

02016000 COWPASTURE RIVER NEAR CLIFTON FORGE, VA

LOCATION.--Lat 37°47'30", long 79°45'35", Alleghany County, Hydrologic Unit 02080201, on left bank 100 ft downstream from highway bridge, 2.5 mi upstream from confluence with Jackson River, and 4.0 mi southeast of Clifton Forge.

DRAINAGE AREA.--461 mi².

PERIOD OF RECORD.--March 1925 to current year. Records for May 1907 to August 1908, published in WSP 242, are unreliable and should not be used.

REVISED RECORDS.--WSP 952: 1925-41. WSP 2104: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,006.93 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to October 1934, nonrecording gage at site 100 ft upstream at present datum.

REMARKS.--Records good. Low flow affected by springs and by occasional regulation from unknown source. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--58 years, 525 ft³/s, 15.47 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,200 ft³/s Mar. 18, 1936, gage height, 18.62 ft, from rating curve extended above 13,000 ft³/s on basis of slope-area measurement at gage height 15.70 ft; minimum, 38 ft³/s Sept. 2, 1932; minimum daily, 40 ft³/s Sept. 1, 1932; minimum gage height, 1.43 ft Jan. 31, 1981, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 20.8 ft, from floodmarks, discharge, about 45,000 ft³/s, from rating curve extended above 13,000 ft³/s on basis of records for other stations in James River basin.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	2330	7040	8.58	Apr. 25	0130	*8780	9.51
Apr. 10	2230	6620	8.34	May 17	0630	5180	7.46
Apr. 16	0300	8010	9.11				

Minimum discharge, 55 ft³/s Jan. 19, gage height, 1.53 ft, result of freezeup; minimum daily, 64 ft³/s Sept. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	133	1330	264	260	499	742	662	645	173	89	77
2	95	125	1620	254	815	467	733	587	543	187	88	75
3	91	120	1080	248	3100	425	3070	539	474	181	85	77
4	89	159	787	234	1850	383	2270	523	519	173	84	74
5	87	227	624	217	1130	353	1430	484	551	171	89	73
6	83	251	583	207	843	339	1090	417	449	164	94	71
7	88	248	652	205	707	368	940	375	398	148	91	70
8	127	211	541	202	593	667	979	349	363	135	116	68
9	108	184	468	196	499	2580	1030	332	324	127	99	66
10	114	166	416	193	453	1870	5010	313	287	122	94	64
11	112	152	374	201	446	1380	4010	290	266	118	95	64
12	112	148	384	218	394	1060	2060	274	247	114	105	65
13	149	214	348	209	392	841	1400	262	228	110	97	74
14	204	208	287	192	374	697	1070	258	216	108	98	71
15	235	210	278	191	382	600	2830	264	209	104	90	68
16	198	189	3410	190	531	522	5690	1170	209	101	86	72
17	156	176	3890	184	908	458	2450	3960	247	100	84	69
18	133	164	1660	150	1270	713	1610	1700	252	97	84	67
19	119	155	1070	130	1140	2640	1220	1060	274	96	81	66
20	114	149	820	135	1010	1980	966	923	305	96	78	66
21	113	147	653	140	918	2000	792	979	294	95	76	71
22	106	154	525	150	922	2520	665	2910	245	106	75	74
23	102	167	445	189	1100	1570	598	1960	219	133	72	74
24	99	186	400	279	1180	1130	5030	1310	202	177	72	73
25	172	193	371	381	982	904	5730	954	184	148	74	70
26	280	192	348	328	776	735	2380	766	169	125	74	69
27	279	183	335	306	618	663	1530	643	158	110	74	69
28	238	296	319	294	535	1220	1140	542	152	103	80	69
29	191	3310	313	278	---	1220	912	582	160	97	83	68
30	163	2090	302	269	---	935	766	723	173	93	90	74
31	146	---	280	268	---	810	---	834	---	90	80	---
TOTAL	4404	10507	24913	6902	24128	32549	60143	26945	8962	3902	2677	2108
MEAN	142	350	804	223	862	1050	2005	869	299	126	86.4	70.3
MAX	280	3310	3890	381	3100	2640	5730	3960	645	187	116	77
MIN	83	120	278	130	260	339	598	258	152	90	72	64
CFSM	.31	.76	1.74	.48	1.87	2.28	4.35	1.89	.65	.27	.19	.15
IN.	.36	.85	2.01	.56	1.95	2.63	4.85	2.17	.72	.31	.22	.17

CAL YR 1982 TOTAL 239500 MEAN 656 MAX 12600 MIN 68 CFSM 1.42 IN 19.33
WTR YR 1983 TOTAL 208140 MEAN 570 MAX 5730 MIN 64 CFSM 1.24 IN 16.80

02016500 JAMES RIVER AT LICK RUN, VA

LOCATION.--Lat 37°46'25", long 79°47'05", Botetourt County, Hydrologic Unit 02080201, on right bank at community of Lick Run, 1,000 ft downstream from bridge on U.S. Highway 220, 0.9 mi downstream from confluence of Cowpasture and Jackson Rivers, 1.8 mi south of Iron Gate, and at mile 342.3.

DRAINAGE AREA.--1,373 mi^2.

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 852: 1936-37. WSP 972: 1927, 1930(M), 1932(M), 1935-36. WSP 1303: 1927-28(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 978.30 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 26, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by Moomaw Lake (station 02011795) 43.8 mi upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--58 years, 1,606 ft^3/s, 15.88 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,600 ft^3/s Mar. 18, 1936; maximum gage height, 27.01 ft June 21, 1972; minimum discharge, 133 ft^3/s Jan. 6, 1981, result of freezeup; minimum daily, 156 ft^3/s Oct. 12, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of about 33 ft, discharge, about 120,000 ft^3/s. Flood in March 1913 reached a stage of 30.4 ft, from floodmarks, discharge, about 98,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,800 ft^3/s Apr. 10, gage height, 13.43 ft; minimum, 264 ft^3/s Sept. 9, gage height, 1.61 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	426	497	3120	839	1020	1840	2350	2110	1740	711	514	383
2	393	442	3880	812	2130	1690	2220	1940	1580	724	479	371
3	379	423	2610	802	6720	1560	6950	1820	1470	725	453	378
4	374	515	1950	772	6170	1300	7000	1790	1640	706	479	377
5	368	687	1600	729	3910	1220	5330	1670	1630	693	447	380
6	359	708	1540	707	2990	1230	3690	1420	1450	667	446	372
7	358	707	1560	699	2410	1370	3170	1230	1340	633	438	365
8	409	639	1340	687	1880	2010	3230	1160	1260	610	466	363
9	396	588	1190	674	1660	4380	3160	1120	1080	589	442	334
10	487	552	1090	673	1480	4220	14200	1070	957	575	431	379
11	436	524	1010	689	1480	3840	11900	1010	902	568	450	381
12	419	528	1070	707	1330	3260	7380	912	853	559	531	384
13	550	638	970	664	1290	2810	5050	910	810	553	483	405
14	699	621	838	655	1260	2480	3660	918	782	541	458	401
15	678	629	812	665	1270	2090	6460	932	796	531	443	385
16	592	550	7210	670	1600	1770	11100	2660	818	526	389	394
17	506	561	11500	647	2550	1570	7150	7720	1070	520	400	388
18	462	542	4970	619	3810	2320	5620	6030	1030	512	405	386
19	440	523	3700	462	3560	11100	3820	3950	993	512	398	389
20	402	517	3070	524	3200	6760	3020	3120	994	510	392	387
21	425	517	2300	584	3020	6770	2480	3260	969	511	387	400
22	406	534	1790	587	3070	9090	2050	5960	874	590	385	408
23	396	562	1590	649	3590	6690	1920	6050	818	606	379	398
24	391	604	1370	876	4050	4710	12300	4760	765	847	376	399
25	642	607	1290	1110	3500	3310	13700	3080	725	812	384	393
26	1240	606	1260	1420	2930	2720	9450	2510	687	649	380	391
27	962	587	1230	1190	2520	2570	6360	2010	665	591	379	391
28	759	794	1190	1150	2270	3200	3780	1660	652	554	394	387
29	642	7250	1010	1080	---	3010	2940	1780	679	534	425	384
30	576	4480	955	1070	---	2620	2360	1980	729	518	402	404
31	530	---	886	1070	---	2460	---	2020	---	508	382	---
TOTAL	16102	27932	69901	24482	76670	105970	173800	78562	30758	18685	13217	11557
MEAN	519	931	2255	790	2738	3418	5793	2534	1025	603	426	385
MAX	1240	7250	11500	1420	6720	11100	14200	7720	1740	847	531	408
MIN	358	423	812	462	1020	1220	1920	910	652	508	376	334
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173
MEAN‡	474	1067	2510	794	2720	3422	5802	2542	991	447	269	212
CFSM‡	.35	.78	1.83	.58	1.98	2.49	4.23	1.85	.72	.33	.20	.15
IN‡	.40	.87	2.11	.67	2.06	2.87	4.72	2.14	.81	.38	.23	.17

CAL YR 1982 TOTAL 682182 MEAN 1869 MAX 25600 MIN 358 MEAN‡ 1884 CFSM‡ 1.37 IN‡ 18.63
WTR YR 1983 TOTAL 647636 MEAN 1774 MAX 14200 MIN 334 MEAN‡ 1760 CFSM‡ 1.28 IN‡ 17.41

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02017500 JOHNS CREEK AT NEW CASTLE, VA

LOCATION.--Lat 37°30'22", long 80°06'25", Craig County, Hydrologic Unit 02080201, on right bank 20 ft downstream from bridge on State Highway 615 at New Castle and 1,700 ft upstream from mouth.

DRAINAGE AREA.--104 mi^2.

PERIOD OF RECORD.--April 1926 to current year.

REVISED RECORDS.--WSP 972: 1935-36(M), 1940(M). WSP 1203: 1928, 1935. WSP 1303: 1927(M), 1928, 1929-34(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,254.30 ft National Geodetic Vertical Datum of 1929. Prior to June 7, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 127 ft^3/s, 16.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft^3/s Jan. 23, 1935, from rating curve extended above 3,200 ft^3/s on basis of slope-area measurement of peak flow; maximum gage height, 12.48 ft June 21, 1972; minimum discharge, 6.0 ft^3/s Dec. 5, 1946, result of freezeup; minimum daily, 6.6 ft^3/s Oct. 1, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 18	2230	*3740	9.79	Apr. 10	0500	2770	9.11

Minimum discharge, 8.0 ft^3/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	20	323	77	106	203	183	219	139	30	15	8.8
2	12	18	299	73	276	178	249	188	123	27	17	8.8
3	12	18	226	72	454	156	617	170	110	24	16	9.2
4	12	22	182	65	335	139	405	159	123	23	14	9.3
5	14	25	158	61	269	125	330	140	106	29	13	9.5
6	19	25	168	58	237	124	290	121	92	28	13	9.1
7	14	24	146	57	205	130	301	108	87	25	13	8.8
8	13	23	126	54	175	163	363	100	77	23	12	8.9
9	13	22	112	52	152	195	399	91	67	21	11	8.8
10	17	21	100	54	140	218	2000	81	59	20	11	8.5
11	18	20	92	60	135	224	927	75	53	19	11	8.4
12	17	19	100	58	130	204	652	69	49	18	12	8.5
13	24	24	86	55	108	183	512	66	44	18	11	10
14	28	25	76	52	103	167	414	66	40	17	11	12
15	22	24	72	57	108	152	492	64	42	16	10	10
16	19	23	984	56	152	136	424	102	48	16	10	10
17	17	22	714	48	246	126	347	122	46	15	10	9.7
18	16	22	465	39	356	1810	300	108	42	16	10	9.7
19	16	23	356	32	343	1820	252	106	51	17	9.9	9.2
20	16	24	294	37	323	765	213	132	44	15	9.3	9.5
21	18	24	236	46	311	1170	185	184	50	15	9.0	10
22	16	33	191	49	316	759	165	280	42	22	8.6	11
23	16	48	159	87	441	549	188	244	49	24	8.5	11
24	15	47	138	158	436	439	1470	209	34	46	8.7	9.9
25	53	45	130	133	396	360	764	178	31	30	9.9	11
26	89	44	122	118	316	296	541	155	28	25	10	10
27	47	43	113	111	263	274	428	133	26	21	9.5	11
28	35	79	105	111	226	266	354	113	24	18	9.8	11
29	27	711	100	108	---	222	302	163	27	17	9.5	11
30	24	327	91	109	---	198	257	201	35	16	9.1	11
31	21	---	83	109	---	195	---	162	---	15	8.9	---
TOTAL	693	1845	6547	2256	7058	11946	14324	4309	1788	666	340.7	293.6
MEAN	22.4	61.5	211	72.8	252	385	477	139	59.6	21.5	11.0	9.79
MAX	89	711	984	158	454	1820	2000	280	139	46	17	12
MIN	12	18	72	32	103	124	165	64	24	15	8.5	8.4
CFSM	.22	.59	2.03	.70	2.42	3.70	4.59	1.34	.57	.21	.11	.09
IN.	.25	.66	2.34	.81	2.52	4.27	5.12	1.54	.64	.24	.12	.11

CAL YR 1982 TOTAL 51698.9 MEAN 142 MAX 2420 MIN 9.3 CFSM 1.37 IN 18.49
WTR YR 1983 TOTAL 52066.3 MEAN 143 MAX 2000 MIN 8.4 CFSM 1.38 IN 18.62

02018000 CRAIG CREEK AT PARR, VA

LOCATION.--Lat 37°39'57", long 79°54'42", Botetourt County, Hydrologic Unit 02080201, on right bank 12 ft upstream from Chesapeake and Ohio Railway bridge, 700 ft downstream from Stony Run, 0.2 mi northeast of Horton, 0.4 mi northwest of Parr, and 12 mi upstream from mouth.

DRAINAGE AREA.--329 mi².

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 852: 1937. WSP 892: 1935-36. WSP 1303: 1929-30(M), 1932-35(M), 1937-38(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 992.50 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 7, 1937, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--58 years, 385 ft³/s, 15.89 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,200 ft³/s June 21, 1972, gage height, 19.29 ft, from high-water mark in well; minimum, 20 ft³/s probably occurred Dec. 21, 25, 1980, or Jan. 4, 1981, gage height, 3.20 ft, result of freezeup; minimum daily, 25 ft³/s Sept. 4, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	1100	*10000	12.40	Apr. 10	1930	7660	11.21
Mar. 21	2300	4200	8.99	Apr. 24	1830	6040	10.24

Minimum discharge, 31 ft³/s Sept. 9-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	85	876	222	298	624	548	630	396	102	56	36
2	47	77	1070	208	557	568	590	556	360	94	59	35
3	46	71	790	202	1700	480	2140	502	324	85	59	35
4	46	77	612	192	1150	415	1460	468	332	76	58	35
5	47	85	497	172	841	370	1020	416	320	77	59	34
6	50	99	458	164	712	361	854	372	304	111	52	34
7	48	104	431	158	629	436	782	336	288	97	52	35
8	51	99	366	155	552	514	1080	312	256	85	48	34
9	51	94	325	150	470	1070	1120	292	226	77	46	32
10	53	88	294	150	426	1040	5110	268	195	76	46	31
11	56	85	264	161	436	1000	3690	248	172	71	49	31
12	58	83	280	166	405	855	2050	230	155	66	51	34
13	71	87	280	161	366	730	1460	219	142	64	46	34
14	80	88	240	155	348	629	1130	208	130	61	49	38
15	95	94	222	155	343	552	1540	208	125	58	47	44
16	82	92	1300	161	486	470	1960	268	150	56	46	50
17	71	88	2650	155	796	410	1390	396	175	52	43	47
18	64	87	1380	134	1240	3050	1090	340	182	49	42	44
19	58	85	988	106	1230	7850	908	316	185	51	41	43
20	57	88	784	113	1120	2990	758	340	280	51	40	43
21	57	90	646	125	1050	2810	632	392	248	52	38	42
22	57	99	524	142	1050	2920	552	710	233	76	36	44
23	57	130	442	161	1230	1780	520	716	188	87	36	43
24	55	172	380	390	1500	1300	3950	605	169	111	36	44
25	74	172	348	453	1230	1030	3020	512	134	144	36	45
26	392	164	325	400	981	836	1800	424	115	115	36	42
27	264	158	312	361	808	734	1320	368	102	97	36	42
28	169	172	289	343	700	752	1030	324	94	77	39	42
29	132	1440	272	330	---	662	860	380	90	65	39	42
30	108	1420	260	320	---	585	734	480	94	61	38	43
31	94	---	236	316	---	561	---	472	---	56	37	---
TOTAL	2640	5773	18141	6581	22654	38384	45098	12308	6164	2400	1396	1178
MEAN	85.2	192	585	212	809	1238	1503	397	205	77.4	45.0	39.3
MAX	392	1440	2650	453	1700	7850	5110	716	396	144	59	50
MIN	46	71	222	106	298	361	520	208	90	49	36	31
CFSM	.26	.58	1.78	.64	2.46	3.76	4.57	1.21	.62	.24	.14	.12
IN.	.30	.65	2.05	.74	2.56	4.34	5.10	1.39	.70	.27	.16	.13

CAL YR 1982 TOTAL 151902 MEAN 416 MAX 4630 MIN 35 CFSM 1.26 IN 17.18
WTR YR 1983 TOTAL 162717 MEAN 446 MAX 7850 MIN 31 CFSM 1.36 IN 18.40

02018500 CATAWBA CREEK NEAR CATAWBA, VA

LOCATION.--Lat 37°28'05", long 80°00'20", Botetourt County, Hydrologic Unit 02080201, on right bank 80 ft upstream from highway bridge, 1.0 mi downstream from Little Catawba Creek, 1.9 mi west of Haymakertown, and 8.2 mi northeast of Catawba.

DRAINAGE AREA.--34.3 mi^2.

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1303: 1944-45(M). WSP 2104: Drainage area. WDR VA-72-1: 1954, 1955(P), 1957-58(P), 1959, 1960-62(P), 1963, 1964(M), 1965-67(P), 1968(M), 1969, 1970(M), 1971.

GAGE.--Water-stage recorder. Datum of gage is 1,299.96 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1953, nonrecording gage at site 80 ft downstream at same datum.

REMARKS.--Records good. At a point 5.3 mi above station, there is transmountain diversion through a tunnel into Roanoke River basin for municipal water supply of city of Roanoke since December 1974. Prior to October 1976, monthly means adjusted for pumpage by Citadel Cement Corp. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 35.8 ft^3/s, 14.17 in/yr, adjusted for pumpage from October 1952 to September 1976, and transmountain diversion since December 1974.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,740 ft^3/s June 21, 1972, gage height, 10.35 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.33 ft^3/s Aug. 16, 1983, result of pumpage; minimum daily, 0.67 ft^3/s Aug. 14, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 13.26 ft, from information by observer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,640 ft^3/s Mar. 18, gage height, 6.46 ft; minimum, 0.33 ft^3/s Aug. 16, gage height, 1.07 ft, result of pumpage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	8.8	30	10	8.8	45	58	62	23	9.1	4.8	3.4
2	4.7	7.9	28	9.2	44	39	208	56	21	8.6	5.1	3.4
3	4.4	7.6	23	9.2	39	34	263	53	21	7.9	5.1	3.5
4	5.0	11	19	8.8	27	31	152	48	22	12	4.6	3.4
5	8.0	6.0	17	5.6	20	28	114	43	19	12	4.8	3.2
6	5.8	5.4	17	5.6	18	49	94	39	21	9.5	4.6	2.6
7	5.6	9.2	14	5.9	15	59	152	36	21	8.6	4.5	1.5
8	5.3	9.2	13	5.0	13	72	200	35	19	7.9	4.3	1.4
9	5.7	8.3	12	5.0	11	102	222	33	17	7.5	4.2	1.5
10	7.7	8.0	11	6.2	11	98	1030	31	16	7.2	4.3	2.2
11	7.8	7.6	12	5.6	10	84	311	29	14	7.2	4.5	2.9
12	6.6	7.7	16	5.9	10	70	195	28	14	6.8	3.2	3.1
13	12	8.1	15	5.3	9.6	58	145	27	14	6.5	3.1	5.1
14	12	7.8	13	5.3	8.8	51	119	27	13	6.5	4.0	5.1
15	9.3	7.7	14	5.6	10	46	192	25	12	4.6	3.1	4.2
16	7.0	7.2	72	4.4	17	40	179	30	15	3.8	1.0	3.7
17	6.1	6.9	43	3.8	28	38	141	27	16	4.3	3.7	3.7
18	6.3	7.6	31	3.2	35	1440	116	24	15	5.8	3.8	3.5
19	5.7	7.5	26	3.2	28	782	97	25	21	5.8	4.0	3.4
20	5.6	8.5	22	3.5	28	276	81	27	21	5.5	3.7	3.4
21	6.0	9.0	19	4.4	28	356	67	31	16	5.1	3.5	4.0
22	6.2	9.4	18	5.0	51	233	58	34	9.5	7.2	3.4	4.2
23	5.6	9.8	15	6.9	169	163	112	35	8.6	7.5	3.7	3.7
24	5.5	10	14	8.4	129	130	622	31	7.9	9.1	4.0	3.5
25	19	9.3	12	7.6	89	105	248	28	6.5	7.2	4.2	3.5
26	12	9.2	6.6	7.3	67	85	163	27	6.2	6.5	4.2	3.5
27	14	9.1	8.8	8.4	54	85	125	24	6.2	5.8	4.0	3.5
28	11	13	12	8.8	48	81	101	23	6.8	5.5	3.7	3.4
29	10	52	11	8.8	---	69	85	32	9.1	5.1	3.5	3.4
30	9.5	28	10	8.8	---	62	72	27	10	4.8	3.4	3.8
31	8.6	---	10	8.4	---	62	---	25	---	4.8	3.4	---
TOTAL	243.3	316.8	584.4	199.1	1026.2	4873	5722	1022	441.8	215.7	121.4	100.7
MEAN	7.85	10.6	18.9	6.42	36.7	157	191	33.0	14.7	6.96	3.92	3.36
MAX	19	52	72	10	169	1440	1030	62	23	12	5.1	5.1
MIN	4.4	5.4	6.6	3.2	8.8	28	58	23	6.2	3.8	1.0	1.4
(*)	.80	.90	15.8	3.5	19.5	0	0	0	.40	.10	0	0
MEAN‡	8.65	11.5	34.7	9.92	56.2	157	191	33.0	15.1	7.06	3.92	3.36
CFSM‡	.25	.34	1.01	.29	1.64	4.58	5.57	.96	.44	.21	.11	.10
IN‡	.29	.37	1.17	.33	1.71	5.28	6.21	1.11	.49	.24	.13	.11

CAL YR 1982 TOTAL 5952.4 MEAN 16.3 MAX 233 MIN 2.7 MEAN‡ 30.4 CFSM‡ .89 IN‡ 12.03
WTR YR 1983 TOTAL 14866.4 MEAN 40.7 MAX 1440 MIN 1.0 MEAN‡ 44.0 CFSM‡ 1.28 IN‡ 17.42

* Diversion, equivalent in cubic feet per second, furnished by City of Roanoke.
‡ Adjusted for diversion.

02019500 JAMES RIVER AT BUCHANAN, VA

LOCATION.--Lat 37°31'50", long 79°40'45", Botetourt County, Hydrologic Unit 02080201, on left bank at Chesapeake and Ohio Railway station at Buchanan, 300 ft upstream from bridge on U.S. Highway 11, 1,000 ft upstream from Purgatory Creek, 1.5 mi downstream from Looney Creek, and at mile 306.4.

DRAINAGE AREA.--2,075 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1898 to current year. Monthly discharge only for some periods, published in WSP 1303. Records for August 1895 to Feb. 11, 1898, published in WSP 11, 15, and 27 are in error and should not be used. Gage-height records collected at this site since 1893 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 602: 1917-24. WSP 972: 1935-36. WSP 1303: 1898-1916, 1917-20(M), 1922(M), 1924(M). WSP 1383: 1927. WSP 2104: Drainage area. WDR VA-72-1: 1913(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 802.90 ft National Geodetic Vertical Datum of 1929. Prior to July 1, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 79.6 mi upstream. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--85 years, 2,469 ft^3/s, 16.16 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 115,000 ft^3/s Mar. 27, 1913, gage height, 31 ft, from floodmarks; minimum, 202 ft^3/s Sept. 8, 1966, gage height, 1.44 ft; minimum daily, 207 ft^3/s Sept. 12, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877 reached a stage of 34.9 ft, from floodmark, discharge, about 142,000 ft^3/s, from rating curve extended above 110,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,700 ft^3/s Apr. 10, gage height, 16.05 ft; minimum, 383 ft^3/s Sept. 10, gage height, 2.00 ft; minimum daily, 421 ft^3/s Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	593	713	4720	1310	1550	3100	3560	3590	2640	964	593	497
2	537	669	5850	1260	2710	2760	3650	3250	2370	934	602	481
3	498	608	4490	1230	9270	2510	11400	3010	2170	959	559	470
4	482	658	3300	1190	9010	2220	11500	2870	2280	905	538	473
5	476	1040	2660	1120	6100	1990	8460	2710	2390	907	560	472
6	478	1000	2400	1070	4520	1910	6140	2410	2310	873	533	472
7	469	974	2380	1040	3740	2360	5190	2140	2340	848	540	461
8	467	930	2130	1020	3080	2660	5480	1940	1970	786	528	453
9	516	848	1880	999	2620	5660	5670	1850	1760	750	543	448
10	561	786	1700	993	2350	6420	23000	1750	1520	720	517	421
11	617	737	1570	1020	2300	6120	24200	1660	1370	700	516	461
12	562	708	1640	1040	2150	5250	13000	1540	1290	680	584	459
13	603	791	1620	1020	2010	4410	8830	1470	1210	661	602	502
14	846	852	1430	974	1910	3830	6440	1440	1150	646	553	505
15	897	836	1300	971	1930	3340	8690	1470	1120	628	532	488
16	844	816	5840	981	2250	2870	16500	1680	1150	621	525	477
17	721	736	17900	968	3570	2530	11400	8110	1210	613	473	494
18	635	741	8780	911	5620	3920	8800	7480	1530	602	487	486
19	590	715	5760	771	5850	23100	6460	5370	1400	589	490	478
20	562	702	4660	700	5200	15200	5050	4050	1420	590	479	480
21	535	704	3710	750	4800	10700	4160	3930	1490	579	469	502
22	541	707	2940	800	4710	15100	3510	6360	1350	645	461	512
23	520	764	2490	924	5380	10900	3140	7860	1240	693	459	492
24	509	835	2200	1270	6610	7850	15200	6740	1140	838	462	482
25	640	888	2000	1780	5860	5730	23600	4600	1060	973	471	484
26	1610	877	1900	1920	4840	4580	14800	3600	973	903	473	480
27	1750	866	1850	1930	4030	4030	10300	2980	921	752	469	479
28	1280	881	1780	1740	3560	4460	6610	2520	880	684	483	476
29	1010	7390	1660	1660	---	4700	5070	2510	875	642	541	471
30	865	9160	1490	1600	---	4000	4160	2770	957	622	509	477
31	776	---	1410	1590	---	3690	---	3000	---	602	495	---
TOTAL	21990	38932	105440	36552	117530	177900	283970	106660	45486	22909	16046	14333
MEAN	709	1298	3401	1179	4198	5739	9466	3441	1516	739	518	478
MAX	1750	9160	17900	1930	9270	23100	24200	8110	2640	973	602	512
MIN	467	608	1300	700	1550	1910	3140	1440	875	579	459	421
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173

CAL YR 1982 TOTAL 957109 MEAN 2622 MAX 33600 MIN 440 MEAN‡ 2637 CFSM‡ 1.27 IN‡ 17.26
WTR YR 1983 TOTAL 987748 MEAN 2706 MAX 24200 MIN 421 MEAN‡ 2692 CFSM‡ 1.30 IN‡ 17.62

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02019500 JAMES RIVER AT BUCHANAN, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1951-56, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1952 to September 1956, April 1968 to current year.
WATER TEMPERATURES: October 1947 to September 1948, May 1951 to September 1956, April 1968 to current year.
SUSPENDED-SEDIMENT DISCHARGE: May 1951 to September 1956.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 945 micromhos Sept. 27, 1954; minimum daily, 67 micromhos Oct. 20, 1975, Oct. 10, 1976.
WATER TEMPERATURES: Maximum daily, 31.0°C July 5, 1955, July 17, 21, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 510 micromhos Sept. 29; minimum daily, 85 micromhos Mar. 19.
WATER TEMPERATURES: Maximum daily, 29.5°C Aug. 21, 22; minimum daily, 0.5°C Jan. 21, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 18...	1430	627	350	8.2	14.0	35	--	120	31	39	6.1	19
DEC 06...	1330	2400	176	7.9	13.0	17	--	68	16	21	3.8	6.0
JAN 17...	1445	967	300	8.3	2.0	35	--	110	35	36	5.4	15
FEB 28...	1215	3550	184	7.9	5.0	10	13.2	67	18	21	3.6	4.6
APR 20...	0920	5100	145	7.7	7.0	5	--	63	11	19	3.7	2.8
JUN 20...	1400	1440	235	7.7	24.0	30	7.6	93	23	29	5.0	10
JUL 25...	1210	959	365	7.7	26.5	40	7.0	130	48	43	5.7	18
SEP 06...	1215	469	418	8.0	25.5	8	7.6	130	37	43	6.7	24

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 18...	2.5	92	38	27	<.10	4.4	201	192	<.010	.25	.300	35
DEC 06...	1.3	52	18	9.7	<.10	6.1	108	97	<.010	.31	.080	27
JAN 17...	2.4	77	28	28	.10	2.9	170	166	.020	.31	.130	56
FEB 28...	1.1	49	16	10	.10	4.0	100	90	<.010	.19	.080	20
APR 20...	1.0	52	14	4.7	<.10	5.6	--	82	<.010	.29	.080	24
JUN 20...	2.2	70	23	18	.10	5.0	142	136	.010	.30	.230	20
JUL 25...	2.7	83	32	44	.10	4.7	236	201	<.010	.22	.360	24
SEP 06...	4.1	98	40	41	.10	5.4	265	225	.010	.12	.430	15

< Actual value is known to be less than the value shown.

02019500 JAMES RIVER AT BUCHANAN, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	285	113	240	223	163	170	160	159	300	310	470
2	325	335	125	255	217	173	180	160	170	---	340	390
3	355	320	120	265	136	175	135	165	182	298	341	420
4	337	337	130	275	121	185	120	180	199	310	360	---
5	340	340	144	275	120	186	130	180	190	300	400	420
6	385	320	155	260	133	197	140	179	185	310	360	430
7	380	315	166	255	140	204	158	198	200	330	---	410
8	340	270	169	240	154	185	155	210	185	320	---	410
9	380	255	172	245	156	142	165	219	215	335	398	420
10	365	254	192	265	162	150	120	230	220	310	380	300
11	345	269	192	253	175	150	100	235	221	330	370	500
12	360	288	213	250	183	145	125	250	238	350	370	420
13	400	298	193	250	184	125	135	240	221	320	380	460
14	365	336	197	238	197	160	140	239	260	330	385	440
15	315	274	195	280	216	165	150	242	243	310	355	440
16	360	278	189	275	198	170	108	260	245	325	380	460
17	320	307	86	305	187	175	135	110	270	310	378	430
18	290	293	101	300	140	195	120	125	260	335	380	---
19	320	278	113	310	125	85	---	125	245	365	440	430
20	320	312	140	320	134	105	145	140	240	350	400	440
21	---	310	155	343	139	120	161	150	250	375	420	470
22	383	324	160	290	141	110	170	140	260	360	410	468
23	365	336	178	285	142	110	170	120	250	360	419	430
24	397	326	180	298	125	130	158	130	259	339	382	440
25	343	304	180	250	122	150	90	125	260	340	420	425
26	360	304	210	225	140	160	119	150	278	350	360	430
27	300	302	205	240	145	170	140	150	310	280	360	420
28	220	291	200	190	160	175	159	170	270	260	410	490
29	235	163	190	202	---	158	140	178	278	280	399	510
30	---	95	205	201	---	160	160	176	305	278	420	500
31	285	---	215	223	---	170	---	160	---	320	450	---
MEAN	337	291	167	261	158	156	141	177	236	323	385	438

WTR YR 1983 MEAN 254 MAX 510 MIN 85

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	14.5	10.0	6.5	6.0	7.0	9.0	18.0	16.5	26.5	26.5	26.0
2	10.0	15.0	10.5	6.0	7.0	8.5	9.5	18.0	16.0	---	27.5	25.0
3	10.5	16.0	12.5	6.0	6.5	9.5	9.5	17.5	17.5	27.0	27.5	25.5
4	11.5	15.0	13.5	5.0	5.0	11.0	9.5	16.0	18.5	26.5	28.0	---
5	12.5	13.0	14.0	5.0	3.5	11.5	9.5	16.0	20.0	26.0	28.0	26.0
6	12.5	10.5	13.5	4.5	3.5	11.5	11.0	16.0	21.0	26.0	28.5	26.5
7	12.0	9.5	12.0	4.5	3.5	12.5	12.0	17.0	20.0	25.5	---	26.5
8	11.5	9.0	10.5	4.5	4.0	12.0	12.0	17.0	21.5	25.5	---	26.5
9	12.0	9.5	8.5	4.5	3.5	11.0	12.5	16.5	21.5	25.5	28.5	26.5
10	10.0	10.0	6.5	5.0	3.5	9.5	12.0	16.5	22.5	25.5	27.5	26.5
11	9.0	10.0	6.0	6.0	1.5	8.0	9.5	17.5	23.0	25.5	27.0	26.0
12	9.5	12.0	5.0	5.5	2.5	8.0	10.0	18.0	24.0	27.0	26.5	25.0
13	8.5	10.0	3.5	5.0	2.5	8.5	11.0	18.0	25.0	27.5	24.0	24.0
14	7.5	9.0	3.0	4.5	3.0	8.5	11.5	19.5	25.0	26.5	24.0	24.0
15	7.5	8.5	2.5	3.0	4.5	10.0	11.5	20.0	25.0	27.5	24.5	22.5
16	5.0	8.0	4.0	3.5	5.0	10.5	10.5	18.5	25.0	28.5	25.0	21.5
17	4.0	6.5	6.5	3.0	6.5	9.0	10.0	15.5	25.5	28.5	25.5	---
18	4.0	7.0	5.5	2.5	6.5	8.5	8.5	14.5	24.5	27.5	26.0	22.5
19	4.0	8.0	4.5	1.0	6.0	8.5	---	14.0	25.0	28.0	28.0	23.0
20	4.5	9.0	4.5	1.0	6.5	9.0	8.5	15.0	24.0	28.0	28.5	21.5
21	---	10.0	4.5	.5	7.0	10.0	10.0	17.0	24.0	28.5	29.5	20.5
22	14.0	11.0	4.5	.5	8.0	8.0	12.0	16.0	23.5	28.0	29.5	18.5
23	12.5	12.5	4.5	1.5	8.0	7.0	11.5	16.5	24.5	28.0	29.0	18.5
24	11.0	11.5	5.5	2.5	7.0	6.5	10.5	16.5	25.0	27.0	27.0	17.5
25	10.5	10.5	7.5	3.0	6.5	7.5	10.0	17.0	26.0	25.5	27.5	17.5
26	10.5	9.5	8.5	3.5	5.5	8.0	11.0	17.5	26.0	26.0	---	17.5
27	11.5	10.0	9.5	4.5	6.0	8.0	13.0	18.0	27.0	27.0	27.0	18.0
28	12.0	8.0	11.0	5.0	6.0	8.0	14.5	17.0	26.5	27.0	27.0	17.5
29	12.5	9.0	9.5	5.0	---	8.5	16.0	17.0	26.0	27.0	27.0	17.5
30	---	9.0	8.0	5.5	---	8.0	16.5	18.0	24.5	27.0	27.5	15.5
31	13.0	---	7.0	6.0	---	8.0	---	17.5	---	27.0	27.0	---
MEAN	10.0	10.5	7.5	4.0	5.0	9.0	11.0	17.0	23.0	27.0	27.0	22.5

WTR YR 1983 MEAN 14.5 MAX 29.5 MIN .5

02020500 CALFPASTURE RIVER ABOVE MILL CREEK, AT GOSHEN, VA

LOCATION.--Lat 37°59'16", long 79°29'38", Rockbridge County, Hydrologic Unit 02080202, on left bank 20 ft upstream from bridge on State Highway 42 at Goshen and 400 ft upstream from Mill Creek.

DRAINAGE AREA.--144 mi^2.

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,384.84 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--45 years, 162 ft^3/s, 15.28 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,900 ft^3/s Oct. 6, 1972, gage height, 12.78 ft, from rating curve extended above 9,200 ft^3/s on basis of slope-area measurement of peak flow; no flow Sept. 5, 6, 1957, Sept. 28, 1959, result of diversion.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1430	3150	6.35	Apr. 24	1730	*4040	7.11
Apr. 15	2230	3200	6.40	May 16	2100	3460	6.65

Minimum discharge, 2.5 ft^3/s Aug. 22, 24, gage height, 1.36 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	42	486	70	86	172	242	183	230	23	6.6	8.7
2	10	37	546	67	381	160	258	160	186	24	6.2	6.9
3	9.7	33	392	64	1260	149	1530	145	158	20	5.6	5.9
4	9.7	37	279	59	716	137	884	141	186	73	5.0	5.9
5	9.7	44	214	56	427	127	527	123	158	48	4.5	5.9
6	14	59	190	55	315	127	369	105	139	30	4.7	5.5
7	18	66	168	54	254	135	295	92	127	24	4.6	5.0
8	19	61	154	52	205	512	266	83	111	19	4.4	5.3
9	23	54	141	49	170	1430	246	78	94	18	3.9	4.4
10	24	46	126	51	158	812	1570	72	81	16	3.7	5.5
11	20	41	114	54	149	527	1270	65	73	14	3.9	4.4
12	19	38	118	52	150	388	692	59	65	12	4.4	3.2
13	25	42	99	49	135	295	453	55	58	12	4.4	4.8
14	33	44	84	48	125	234	331	54	64	11	4.1	4.6
15	46	45	80	48	123	198	1280	58	56	11	3.7	4.4
16	45	46	1820	48	170	170	1970	1140	44	10	3.4	4.6
17	38	45	1240	47	295	147	868	1720	41	12	3.4	4.8
18	33	42	565	31	420	154	527	676	36	13	3.4	4.1
19	29	39	358	29	381	1200	369	394	41	13	3.4	3.7
20	26	38	262	33	331	860	280	320	81	13	3.0	3.4
21	25	37	201	38	295	836	219	492	62	15	2.9	3.9
22	23	38	165	40	300	884	183	1060	47	21	2.7	4.6
23	22	46	143	52	364	557	167	668	39	13	2.7	4.8
24	20	61	127	97	420	381	2280	427	34	15	2.5	4.8
25	29	69	115	115	347	290	1930	295	29	12	2.9	4.8
26	58	65	103	117	262	226	868	234	25	10	3.0	4.6
27	87	60	97	111	212	238	505	183	23	9.0	3.9	4.6
28	80	73	90	107	186	572	353	152	23	8.6	5.9	3.2
29	66	1110	86	99	---	459	266	170	19	8.0	7.6	3.7
30	56	779	81	95	---	342	216	238	21	7.6	5.9	5.0
31	47	---	75	94	---	290	---	290	---	6.9	6.6	---
TOTAL	975.1	3237	8719	1981	8637	13009	21214	9932	2351	542.1	132.9	145.0
MEAN	31.5	108	281	63.9	308	420	707	320	78.4	17.5	4.29	4.83
MAX	87	1110	1820	117	1260	1430	2280	1720	230	73	7.6	8.7
MIN	9.7	33	75	29	86	127	167	54	19	6.9	2.5	3.2
CFSM	.22	.75	1.95	.44	2.14	2.92	4.91	2.22	.54	.12	.03	.03
IN.	.25	.84	2.25	.51	2.23	3.36	5.48	2.57	.61	.14	.03	.04

CAL YR 1982 TOTAL 81521.3 MEAN 223 MAX 7060 MIN 6.6 CFSM 1.55 IN 21.06
WTR YR 1983 TOTAL 70875.1 MEAN 194 MAX 2280 MIN 2.5 CFSM 1.35 IN 18.31

02021500 MAURY RIVER AT ROCKBRIDGE BATHS, VA

LOCATION.--Lat 37°54'26", long 79°25'20", Rockbridge County, Hydrologic Unit 02080202, on right bank at Rockbridge Baths, 1,200 ft upstream from bridge on State Highway 39, and 1.0 mi upstream from Hays Creek.

DRAINAGE AREA.--329 mi².

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1945, published as North River at Rockbridge Baths.

REVISED RECORDS.--WSP 972: 1929-40, 1941(M). WSP 1002: 1930(m). WSP 1553: 1931(m).

GAGE.--Water-stage recorder. Datum of gage is 1,100.33 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Since 1966, some regulation at times by Lake Merriweather on Little Calfpasture River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--55 years, 373 ft³/s, 15.40 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s Mar. 17, 1936, gage height, 13.07 ft, from rating curve extended above 16,000 ft³/s; minimum, 5.8 ft³/s Sept. 10, 1966, gage height, 0.79 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1530	6200	7.27	Apr. 24	1800	*7730	7.91
Apr. 10	1500	5090	6.74	May 16	2330	5790	7.08

Minimum discharge, 18 ft³/s Sept. 8, 10, 13, 16, 20-21, gage height, 0.97 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	72	1040	174	179	458	636	557	539	64	28	25
2	82	65	1160	167	1100	419	670	485	447	70	27	25
3	62	61	835	161	2700	366	3380	437	365	65	26	23
4	60	76	628	148	1560	327	2010	417	447	85	25	23
5	66	143	492	137	972	300	1310	336	380	98	26	23
6	75	125	439	133	754	294	988	272	311	77	26	22
7	96	122	360	131	630	333	850	248	271	62	26	20
8	81	112	307	126	508	772	877	235	233	54	24	19
9	83	101	275	120	413	2330	851	222	199	49	24	19
10	86	91	243	125	376	1580	3860	203	174	45	23	18
11	83	83	224	141	339	1160	2860	189	158	43	25	21
12	80	75	253	137	340	899	1670	176	145	40	26	20
13	88	96	211	122	304	719	1110	167	133	38	25	19
14	113	96	180	117	294	597	815	161	124	35	25	21
15	107	89	174	118	288	510	1840	165	176	34	24	19
16	102	87	3820	116	396	431	3200	1680	141	33	23	18
17	90	84	2660	108	711	368	1990	3520	121	31	23	19
18	79	80	1350	98	1070	425	1380	1430	119	30	23	20
19	50	76	905	93	989	2330	1030	968	115	30	22	20
20	51	75	689	99	893	1750	808	834	137	28	22	18
21	48	74	534	97	827	1910	656	892	147	29	22	20
22	46	76	419	96	843	1900	548	1800	117	47	21	20
23	44	93	351	127	1040	1310	527	1390	107	45	20	20
24	42	108	313	248	1130	957	5110	986	87	52	20	20
25	71	115	278	247	921	763	3870	707	66	47	21	21
26	130	110	254	236	712	605	1920	492	59	39	20	20
27	129	104	239	224	567	629	1300	426	55	34	21	19
28	113	123	227	215	494	1320	915	361	60	32	24	22
29	99	2050	219	202	---	1040	771	475	53	30	28	19
30	88	1520	199	197	---	813	650	585	61	29	25	23
31	80	---	183	194	---	720	---	654	---	28	23	---
TOTAL	2518	6182	19461	4654	21350	28335	48402	21470	5547	1423	738	616
MEAN	81.2	206	628	150	763	914	1613	693	185	45.9	23.8	20.5
MAX	130	2050	3820	248	2700	2330	5110	3520	539	98	28	25
MIN	42	61	174	93	179	294	527	161	53	28	20	18
CFSM	.25	.63	1.91	.46	2.32	2.78	4.90	2.11	.56	.14	.07	.06
IN.	.28	.70	2.20	.53	2.41	3.20	5.47	2.43	.63	.16	.08	.07

CAL YR 1982 TOTAL 187019 MEAN 512 MAX 13600 MIN 42 CFSM 1.56 IN 21.15
WTR YR 1983 TOTAL 160696 MEAN 440 MAX 5110 MIN 18 CFSM 1.34 IN 18.17

02022500 KERRS CREEK NEAR LEXINGTON, VA

LOCATION.--Lat 37°49'32", long 79°26'36", Rockbridge County, Hydrologic Unit 02080202, on right bank 100 ft upstream from bridge on Interstate Highway 64, 1.4 mi upstream from mouth, and 2.9 mi north of Lexington.

DRAINAGE AREA.--35.0 mi².

PERIOD OF RECORD.--October 1926 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1203: 1927-29, 1930-34(M), 1935-40, 1941(M), 1942, 1943-48(M), 1949. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 980.32 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Jan. 27, 1927, to Sept. 30, 1953, nonrecording gage at site 1,000 ft downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 35.4 ft³/s, 13.74 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s Sept. 10, 1950, gage height, 13.8 ft, from floodmarks, site and datum then in use, from rating curve extended above 800 ft³/s on basis of contracted-opening and slope-area measurements of peak flow; minimum, 0.90 ft³/s July 22, 1966 (result of temporary dam upstream); minimum daily, 4.0 ft³/s many days in August and September 1932, Nov. 21, 1938, July 22, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0500	1510	6.34	Apr. 10	0330	*1740	6.59
Feb. 2	1500	874	5.49	Apr. 15	1230	874	5.49
Mar. 18	2330	904	5.54	Apr. 24	0630	1320	6.13
Apr. 2	2130	952	5.62				

Minimum discharge, 6.7 ft³/s Sept. 29, gage height, 2.18 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	7.9	61	16	14	37	45	53	29	15	8.8	8.6
2	8.4	7.9	49	15	283	34	172	49	27	14	8.8	8.3
3	8.1	7.7	36	15	148	32	230	46	27	13	8.6	8.3
4	8.4	12	30	14	73	29	106	43	32	13	8.4	8.1
5	8.1	14	27	14	51	27	81	38	25	15	8.4	8.0
6	7.5	11	26	14	45	29	69	36	24	14	14	7.8
7	8.0	9.7	22	13	39	30	78	34	23	12	9.6	7.8
8	8.3	8.9	20	13	34	57	83	33	21	12	9.0	7.8
9	8.6	8.6	18	13	31	72	137	31	20	12	8.6	7.5
10	9.0	8.2	17	14	29	65	635	29	19	11	8.6	7.5
11	9.0	7.9	17	15	28	63	192	28	19	11	16	7.5
12	9.0	8.6	21	14	28	53	120	27	18	11	15	7.8
13	16	13	17	13	25	46	90	26	18	11	10	8.6
14	13	10	17	13	25	41	77	27	17	10	9.4	8.1
15	10	9.4	17	13	25	37	377	27	17	10	9.2	7.6
16	9.3	8.7	444	12	36	33	197	111	16	10	9.0	7.6
17	8.8	8.5	102	12	73	31	122	69	16	9.8	8.8	7.5
18	8.6	8.4	60	11	90	137	95	49	18	9.6	8.6	7.5
19	8.6	8.2	46	11	77	304	78	44	18	9.4	8.4	7.3
20	8.7	9.0	37	11	69	106	67	44	21	9.4	8.1	7.2
21	9.3	9.0	32	11	65	215	58	50	18	9.4	8.1	7.8
22	8.6	9.3	27	12	74	120	51	52	16	10	8.1	7.8
23	8.5	10	25	19	117	84	58	56	15	10	8.1	7.3
24	8.4	9.6	23	20	86	68	685	46	14	13	9.0	7.3
25	25	8.9	21	17	64	57	207	40	14	10	8.6	7.5
26	18	8.6	20	16	50	48	120	37	13	10	8.3	7.3
27	11	8.5	19	15	43	69	92	32	13	9.4	9.0	7.3
28	9.7	22	19	13	39	76	76	31	13	9.2	14	7.3
29	8.9	160	18	14	---	59	65	43	16	9.0	9.8	7.2
30	8.4	45	17	14	---	51	58	37	19	8.8	8.6	8.0
31	8.2	---	16	14	---	50	---	32	---	8.6	8.4	---
TOTAL	307.8	478.5	1321	433	1761	2160	4521	1300	576	339.6	295.3	231.2
MEAN	9.93	16.0	42.6	14.0	62.9	69.7	151	41.9	19.2	11.0	9.53	7.71
MAX	25	160	444	20	283	304	685	111	32	15	16	8.6
MIN	7.5	7.7	16	11	14	27	45	26	13	8.6	8.1	7.2
CFSM	.28	.46	1.22	.40	1.80	1.99	4.31	1.20	.55	.31	.27	.22
IN.	.33	.51	1.40	.46	1.87	2.30	4.81	1.38	.61	.36	.31	.25

CAL YR 1982 TOTAL 12949.4 MEAN 35.5 MAX 1160 MIN 5.6 CFSM 1.01 IN 13.76
WTR YR 1983 TOTAL 13724.4 MEAN 37.6 MAX 685 MIN 7.2 CFSM 1.07 IN 14.59

02024000 MAURY RIVER NEAR BUENA VISTA, VA

LOCATION.--Lat 37°45'45", long 79°23'30", Rockbridge County, Hydrologic Unit 02080202, on right bank 0.5 mi downstream from South River and 2.8 mi northwest of Buena Vista.

DRAINAGE AREA.--646 mi^2.

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1945, published as North River near Buena Vista.

REVISED RECORDS.--WSP 952: 1940-41. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 846.58 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Since 1966, some regulation at times by Lake Merriweather on Little Calfpasture River. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--45 years, 657 ft^3/s, 13.81 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105,000 ft^3/s Aug. 20, 1969, gage height, 31.23 ft, from floodmarks, from rating curve extended above 17,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 20 ft^3/s Oct. 10, 1941, occurred during filling of a small reservoir 2 mi upstream; unqualified minimum, 37 ft^3/s Sept. 9, 1966; minimum gage height, 0.98 ft Jan. 5, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936, reached a stage of about 22 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1900	7470	8.67	Apr. 24	2130	*9260	9.73
Apr. 10	1030	8600	9.35				

Minimum discharge, 72 ft^3/s Sept. 20-21, 28-29, 30; minimum gage height, 1.17 ft Sept. 12, 20-21, 28-29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	168	1600	359	327	876	1080	1110	811	224	107	103
2	180	158	1760	345	1420	834	1120	996	708	228	110	103
3	157	151	1330	338	4030	762	4920	913	620	221	106	100
4	142	305	1030	321	2350	708	3230	870	702	204	106	96
5	147	422	843	304	1540	678	2200	780	648	262	101	95
6	143	327	743	290	1210	650	1730	662	552	231	129	92
7	172	276	639	284	1020	686	1580	610	502	199	116	88
8	166	253	552	277	858	833	1580	581	459	182	107	85
9	162	232	499	268	723	2580	1630	559	416	172	103	81
10	168	215	458	271	654	2060	7200	517	381	163	101	80
11	168	200	432	293	627	1640	5080	484	353	158	111	79
12	162	190	475	288	571	1340	3100	462	338	148	180	85
13	194	233	429	267	576	1110	2220	441	319	142	122	97
14	222	235	366	256	539	960	1740	433	308	137	110	94
15	208	216	362	253	510	852	2790	458	350	131	108	88
16	191	205	4440	249	587	743	4790	1130	334	127	106	84
17	177	198	4120	237	958	662	3140	4470	338	123	105	82
18	165	191	2140	226	1540	939	2340	1940	315	116	106	78
19	146	184	1500	208	1510	3800	1860	1370	312	114	103	77
20	123	181	1170	212	1400	2930	1530	1190	327	116	100	75
21	132	180	943	226	1320	2720	1290	1100	371	112	96	77
22	123	181	772	230	1370	2780	1110	2030	364	147	94	90
23	118	188	661	291	1700	2050	1000	1880	304	160	94	82
24	114	204	596	398	1920	1590	5850	1420	274	176	100	77
25	166	209	542	415	1610	1320	5970	1120	239	166	98	77
26	314	208	498	394	1300	1100	3060	846	218	146	96	78
27	272	202	471	378	1060	1040	2260	747	208	133	94	77
28	239	227	451	366	933	1760	1690	666	214	122	107	75
29	213	2640	435	350	---	1620	1450	748	225	114	120	75
30	194	2360	406	340	---	1330	1260	822	230	110	116	79
31	180	---	377	342	---	1180	---	914	---	107	99	---
TOTAL	5444	11139	31040	9276	34163	44133	79800	32269	11740	4891	3351	2549
MEAN	176	371	1001	299	1220	1424	2660	1041	391	158	108	85.0
MAX	314	2640	4440	415	4030	3800	7200	4470	811	262	180	103
MIN	114	151	362	208	327	650	1000	433	208	107	94	75
CFSM	.27	.57	1.55	.46	1.89	2.20	4.12	1.61	.61	.25	.17	.13
IN.	.31	.64	1.79	.53	1.97	2.54	4.60	1.86	.68	.28	.19	.15

CAL YR 1982 TOTAL 286305 MEAN 784 MAX 16400 MIN 114 CFSM 1.21 IN 16.49
WTR YR 1983 TOTAL 269795 MEAN 739 MAX 7200 MIN 75 CFSM 1.14 IN 15.54

02025500 JAMES RIVER AT HOLCOMBS ROCK, VA

LOCATION.--Lat 37°30'04", long 79°15'46", Bedford County, Hydrologic Unit 02080203, on right bank at Holcombs Rock, 0.9 mi downstream from Pedlar River, and at mile 268.6.

DRAINAGE AREA.--3,259 mi^2.

PERIOD OF RECORD.--January 1900 to September 1915 (gage heights only), October 1926 to current year. Monthly discharge only for some periods, published in WSP 1303. Published as "at Salt Creek" December 1926 to June 1931.

REVISED RECORDS.--WSP 972: 1913(M), 1932-33, 1935(M), 1936. WSP 1303: 1928(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 548.53 ft National Geodetic Vertical Datum of 1929. January 1900 to September 1915, nonrecording gage in powerhouse of Owens Illinois Glass Company 1,000 ft upstream at different datum. December 1926 to June 1931, water-stage recorder at site 2 mi downstream at different datum.

REMARKS.--Records good. Some diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 117.5 mi upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 3,580 ft^3/s, 14.92 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft^3/s Aug. 20, 1969, gage height, 35.50 ft, from rating curve extended above 73,000 ft^3/s on basis of records for other stations in James River basin; minimum, 71 ft^3/s Oct. 24, 1963; minimum daily, 223 ft^3/s July 28, 1930; minimum gage height, 2.91 ft Oct. 5, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1913 reached a stage of 31.3 ft, from floodmarks, discharge, 118,000 ft^3/s, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 17	1400	26600	14.85	Apr. 16	1545	25000	14.42
Mar. 20	0015	33800	16.72	Apr. 25	0515	39200	18.04
Apr. 11	0145	*43400	18.97				

Minimum discharge, 122 ft^3/s Sept. 30, gage height, 3.15 ft; minimum daily, 531 ft^3/s Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	985	978	7010	2050	2220	4560	5140	5470	3700	1500	900	722
2	935	1080	7250	1960	4250	4090	6400	4910	3350	1490	889	716
3	913	965	6550	1900	15000	3730	19800	4500	3020	1490	890	692
4	777	1050	4760	1840	13500	3490	18100	4310	3140	1440	816	668
5	802	1710	3820	1780	9250	3120	12900	4040	3240	1570	819	674
6	748	1630	3370	1660	6610	3040	9630	3650	3020	1490	827	656
7	808	1510	3130	1650	5420	3290	7860	3290	3180	1340	824	661
8	777	1450	2990	1610	4530	3670	7760	3080	2790	1270	819	644
9	819	1340	2670	1580	3800	7000	8670	2950	2470	1200	799	630
10	905	1280	2500	1580	3450	9260	34200	2790	2280	1150	792	621
11	910	1150	2220	1610	3350	8490	36100	2660	2090	1100	765	592
12	955	1160	2380	1670	3220	7320	20000	2540	1980	1090	814	626
13	979	1160	2410	1570	2990	6170	15300	2400	1870	1010	930	656
14	1100	1260	2210	1580	2850	5300	10100	2330	1790	1030	870	824
15	1290	1270	2050	1540	2790	4660	10700	2420	1760	1070	866	713
16	1230	1240	8760	1520	2970	4110	23200	2630	1760	1000	822	678
17	1120	1140	23400	1440	4190	3670	17700	10500	1770	968	786	661
18	1010	1120	14300	1440	6940	4150	13100	10000	1840	817	727	671
19	924	1120	8400	1280	8200	23700	10100	7420	2040	992	741	667
20	912	1110	6450	1120	7360	23800	7740	5710	1930	926	697	655
21	842	1100	5210	1270	6760	14600	6400	5270	2060	918	691	669
22	823	1080	4220	1420	6640	18700	5430	7410	2110	931	727	836
23	818	1110	3510	1640	7690	15000	4820	10100	1870	1030	696	724
24	803	1210	3140	1910	9510	11000	18600	8670	1730	1160	686	531
25	917	1210	2930	2440	8670	8180	34500	6500	1610	1330	706	766
26	1620	1270	2740	2470	7050	6430	20600	4880	1500	1310	696	660
27	2320	1240	2610	2730	5800	5780	15000	4150	1400	1190	688	696
28	1900	1280	2570	2400	5020	6890	10400	3540	1360	1070	684	574
29	1530	5910	2430	2370	---	7250	7690	3400	1430	971	744	738
30	1360	13900	2280	2280	---	6170	6400	3720	1510	970	782	593
31	1250	---	2160	2250	---	5500	---	3960	---	913	760	---
TOTAL	33082	54033	150430	55560	170030	242120	424340	149200	65600	35736	24253	20214
MEAN	1067	1801	4853	1792	6073	7810	14140	4813	2187	1153	782	674
MAX	2320	13900	23400	2730	15000	23800	36100	10500	3700	1570	930	836
MIN	748	965	2050	1120	2220	3040	4820	2330	1360	817	684	531
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173
MEAN‡	1022	1937	5108	1796	6055	7814	14149	4821	2153	997	625	501
CFSM‡	.31	.59	1.57	.55	1.86	2.40	4.34	1.48	.66	.31	.19	.15
IN‡	.36	.66	1.81	.63	1.94	2.76	4.85	1.71	.74	.35	.22	.17

CAL YR 1982 TOTAL 1384337 MEAN 3793 MAX 51700 MIN 683 MEAN‡ 3808 CFSM‡ 1.17 IN‡ 15.87
WTR YR 1983 TOTAL 1424598 MEAN 3903 MAX 36100 MIN 531 MEAN‡ 3889 CFSM‡ 1.19 IN‡ 16.20

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02026000 JAMES RIVER AT BENT CREEK, VA

LOCATION.--Lat 37°32'10", long 78°49'30", Nelson County, Hydrologic Unit 02080203, on left bank at town of Bent Creek, 150 ft downstream from Bent Creek, 525 ft upstream from bridge on U.S. Highway 60, 1.3 mi southeast of Gladstone, and at mile 227.8.

DRAINAGE AREA.--3,683 mi².

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to 1926, published as "at Bent Creek, near Gladstone."

REVISED RECORDS.--WSP 742: 1931(m). WSP 972: 1935-36. WSP 1066: 1940. WSP 1203: 1942. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 381.39 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 12, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Large diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 158.3 mi upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--59 years, 4,178 ft³/s, 15.41 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176,000 ft³/s June 21, 1972, gage height, 27.13 ft, from high-water mark in gage house, from rating curve extended above 89,000 ft³/s on basis of velocity-area studies and records for other stations in James River basin; minimum, 222 ft³/s Oct. 13, 14, 1930, gage height, 2.21 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 26,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 20	0630	33200	11.55	Apr. 25	1130	39200	12.54
Apr. 11	0645	*44100	13.32				

Minimum discharge, 648 ft³/s July 23, gage height, 2.62 ft; minimum daily, 661 ft³/s Sept. 18-19, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1320	1430	9380	2260	2450	5670	6750	6900	4840	1810	1030	970
2	881	1120	7610	2140	3320	5190	6990	6250	4190	1830	1200	942
3	1090	1510	8170	2430	12400	4540	21800	5950	3690	1660	975	927
4	1010	1180	6650	2230	14700	4260	19800	5540	4030	1460	1040	737
5	1010	2050	5100	2030	11200	3460	14600	5120	3470	1780	1240	790
6	916	1760	4190	1880	8140	4120	11300	4840	4260	1970	1180	1040
7	894	1680	3780	1660	6820	4190	9290	4120	3630	1640	690	790
8	874	1700	3840	1500	6110	4480	9000	3850	3840	1620	1050	686
9	1050	1580	3310	1750	4780	5560	9250	3660	3160	1450	1040	699
10	1110	1710	2940	1970	4320	10100	31600	3580	2680	1210	978	858
11	1010	1220	2370	1830	4330	9680	40500	3300	2420	1360	988	737
12	952	1440	2570	1770	3390	8750	23200	3220	2200	1490	939	711
13	1300	1650	3210	1750	3990	7470	15600	3190	2380	1210	1060	737
14	1540	1390	2460	1760	3530	6640	11600	2500	2090	1280	1160	899
15	1330	1620	2600	1620	3550	6250	10800	3030	2040	989	1100	1230
16	1500	1790	5070	1690	3560	5230	20200	3260	2090	1390	1070	970
17	1230	1120	21200	1660	4240	4670	18800	6360	2000	961	1060	763
18	1640	1370	17600	1410	7420	4840	13500	11900	2110	1120	999	661
19	1020	1210	10000	1480	9510	17300	11200	9310	2230	1220	956	661
20	946	1160	7850	1460	8770	27400	9220	7230	2410	932	803	817
21	1020	1270	6640	1180	7960	15600	7750	6290	2500	1140	1040	661
22	882	1370	5360	1430	7590	17400	6800	7330	2420	1210	817	885
23	1050	1320	4620	1900	8180	16400	6320	10700	2730	1130	956	913
24	974	1310	3610	1970	9930	12600	13400	10100	1760	1330	830	790
25	1250	1250	3570	2770	10000	9990	34900	8390	2140	1190	844	790
26	1800	1410	3290	2630	8460	8010	23100	6260	1560	1930	1040	686
27	2330	1400	3460	3030	7000	7530	16500	5420	1390	1330	711	844
28	2310	1510	2860	3120	6290	8850	12300	4510	1980	1480	858	686
29	2020	3010	2900	2380	---	8910	9400	4110	1290	1050	942	750
30	1360	13800	2600	2580	---	7920	7890	4410	2050	1240	1060	750
31	1450	---	2430	3010	---	7120	---	4310	---	997	942	---
TOTAL	39069	57340	171240	62280	191940	270130	453360	174940	79580	42409	30598	24380
MEAN	1260	1911	5524	2009	6855	8714	15110	5643	2653	1368	987	813
MAX	2330	13800	21200	3120	14700	27400	40500	11900	4840	1970	1240	1230
MIN	874	1120	2370	1180	2450	3460	6320	2500	1290	932	690	661
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173

CAL YR 1982 TOTAL 1594710 MEAN 4369 MAX 61900 MIN 636 MEAN‡ 4384 CFSM‡ 1.19 IN‡ 16.16
WTR YR 1983 TOTAL 1597266 MEAN 4376 MAX 40500 MIN 661 MEAN‡ 4362 CFSM‡ 1.18 IN‡ 16.08

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02027000 TYE RIVER NEAR LOVINGSTON, VA

LOCATION.--Lat 37°42'55", long 78°58'55", Nelson County, Hydrologic Unit 02080203, on right bank at downstream side of bridge on State Highway 158, 3.5 mi downstream from Hat Creek, 4.8 mi upstream from Piney River, and 6.8 mi southwest of Lovingston.

DRAINAGE AREA.--92.8 mi².

PERIOD OF RECORD.--August 1938 to current year.

REVISED RECORDS.--WSP 892: 1938. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 578.39 ft National Geodetic Vertical Datum of 1929. Sept. 15, 1969, to Oct. 15, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good above 40 ft³/s and fair below.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--45 years, 154 ft³/s, 22.54 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/s Aug. 20, 1969, gage height, 29.0 ft, from floodmarks, from rating curve extended above 7,600 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.50 ft³/s Sept. 10, 11, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0745	1600	4.62	Apr. 10	0500	2790	6.61
Apr. 2	2230	*4490	8.69				

Minimum daily discharge, 6.5 ft³/s Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	39	203	96	86	224	335	298	122	53	18	20
2	32	38	180	92	528	218	885	271	115	76	17	16
3	28	37	156	91	702	215	1690	254	110	79	17	14
4	25	124	141	85	437	213	931	255	139	56	23	12
5	37	113	130	83	333	215	694	22[illegible]	105	75	24	10
6	45	72	133	82	287	243	526	199	108	55	26	9.5
7	30	62	115	80	252	318	497	186	97	49	20	8.5
8	21	57	105	76	223	721	440	182	89	45	18	8.0
9	22	53	98	74	200	630	508	165	80	44	17	7.5
10	28	50	92	83	186	516	1880	152	76	43	20	7.0
11	25	47	91	101	143	439	1030	145	70	41	22	7.0
12	24	45	108	83	135	375	766	138	67	40	33	7.0
13	42	59	85	76	125	324	601	133	66	38	26	8.5
14	51	51	79	74	120	288	509	130	76	35	23	14
15	35	47	80	75	151	259	618	144	80	34	20	10
16	30	46	983	73	173	233	604	261	78	32	19	9.5
17	27	44	643	70	219	217	528	206	65	30	17	8.5
18	27	44	428	69	269	359	477	170	67	28	16	8.0
19	25	42	333	69	257	717	427	163	82	31	16	7.0
20	24	45	271	70	245	505	384	176	75	31	14	6.5
21	25	51	225	72	238	504	338	225	72	26	13	9.0
22	25	48	196	78	253	435	304	269	97	36	12	17
23	23	48	177	125	343	394	304	259	67	32	14	9.5
24	23	47	160	130	355	356	916	237	61	36	19	8.0
25	74	44	147	106	317	323	735	207	58	32	16	8.0
26	141	44	135	97	272	287	560	188	53	29	13	8.5
27	64	43	128	95	240	414	477	169	54	25	13	8.5
28	51	50	124	93	224	511	420	156	54	20	12	8.5
29	45	369	115	89	---	450	372	176	55	19	26	9.0
30	41	225	107	90	---	402	330	151	55	18	19	14
31	39	---	101	93	---	375	---	136	---	17	16	---
TOTAL	1164	2084	6069	2670	7313	11680	19086	6023	2393	1205	579	298.5
MEAN	37.5	69.5	196	86.1	261	377	636	194	79.8	38.9	18.7	9.95
MAX	141	369	983	130	702	721	1880	298	139	79	33	20
MIN	21	37	79	69	86	213	304	130	53	17	12	6.5
CFSM	.40	.75	2.11	.93	2.81	4.06	6.85	2.09	.86	.42	.20	.11
IN.	.47	.84	2.43	1.07	2.93	4.68	7.65	2.41	.96	.48	.23	.12

CAL YR 1982 TOTAL 51263.0 MEAN 140 MAX 1590 MIN 14 CFSM 1.51 IN 20.55
WTR YR 1983 TOTAL 60564.5 MEAN 166 MAX 1880 MIN 6.5 CFSM 1.79 IN 24.28

02027500 PINEY RIVER AT PINEY RIVER, VA

LOCATION.--Lat 37°42'08", long 79°01'40", Nelson County, Hydrologic Unit 02080203, on left bank at upstream side of bridge on State Highway 151, 0.2 mi southwest of Piney River Post Office, 1.7 mi downstream from Indian Creek, and 2.5 mi southeast of Lowesville.

DRAINAGE AREA.--47.6 mi².

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 2104: Drainage area. WDR VA-72-1: 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 633.58 ft National Geodetic Vertical Datum of 1929. Prior to May 27, 1969, water-stage recorder, and Nov. 4, 1969, to Feb. 26, 1970, nonrecording gage at site 20 ft downstream from former highway bridge at same datum. Feb. 26, 1970, to Sept. 20, 1973, on right bank 20 ft upstream from bridge at same datum.

REMARKS.--Records good except those for period of no gage-height record, July 28 to Sept. 6, which are fair. Periodic dewatering of upstream quarries adds small amount of inflow. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--34 years, 93.6 ft³/s, 26.70 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,000 ft³/s Aug. 20, 1969, gage height, 13.8 ft, from floodmarks, from rating curve extended above 6,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 1.1 ft³/s Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1949 reached a stage of 9.9 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0845	1020	3.46	Apr. 10	0445	1610	4.41
Apr. 2	2115	*1830	4.74				

Minimum discharge, 2.4 ft³/s Sept. 12-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	104	62	47	117	163	164	87	41	9.4	9.2
2	13	15	96	60	199	109	433	149	81	47	10	7.8
3	12	13	89	59	306	103	779	138	77	47	11	6.6
4	15	36	84	56	240	101	488	130	96	37	14	5.8
5	25	40	78	55	195	101	374	116	75	49	17	5.2
6	17	29	76	53	170	120	306	106	77	37	23	4.7
7	16	27	68	51	148	149	277	99	70	32	17	4.2
8	14	24	64	48	130	260	238	96	68	30	14	4.0
9	13	21	61	47	116	300	295	90	61	28	12	4.0
10	18	20	58	52	106	272	1220	84	59	27	16	3.6
11	16	19	58	56	96	234	693	79	56	26	18	3.6
12	17	19	64	49	88	201	483	75	52	23	27	3.2
13	36	25	53	47	86	175	376	72	49	22	18	4.8
14	37	20	52	47	82	157	308	71	59	20	12	6.5
15	24	20	50	48	82	141	316	76	53	19	11	5.2
16	19	19	603	46	88	128	303	107	46	17	10	4.8
17	17	19	385	45	106	118	284	92	43	16	9.8	4.6
18	16	19	269	40	121	145	262	85	44	16	9.6	4.4
19	16	18	208	38	119	252	232	88	49	15	9.0	4.2
20	16	24	169	40	115	245	204	96	80	16	8.0	4.0
21	16	27	144	42	113	254	180	133	60	15	7.4	9.0
22	16	25	124	45	117	223	160	169	55	23	7.0	15
23	15	23	110	69	149	203	161	176	44	16	8.8	7.0
24	14	22	98	60	163	185	382	164	39	21	11	5.6
25	20	21	91	57	159	166	355	151	37	16	8.5	5.4
26	29	20	83	56	146	149	310	138	34	15	8.0	5.2
27	21	19	78	55	133	190	270	124	32	13	7.5	5.2
28	18	30	76	54	123	203	234	112	32	12	7.2	5.0
29	17	126	70	53	---	193	205	121	39	11	17	5.0
30	16	99	65	53	---	186	183	103	41	10	11	6.0
31	15	---	64	50	---	179	---	93	---	9.8	8.0	---
TOTAL	568	854	3692	1593	3743	5559	10474	3497	1695	726.8	377.2	168.8
MEAN	18.3	28.5	119	51.4	134	179	349	113	56.5	23.4	12.2	5.63
MAX	37	126	603	69	306	300	1220	176	96	49	27	15
MIN	12	13	50	38	47	101	160	71	32	9.8	7.0	3.2
CFSM	.38	.60	2.50	1.08	2.82	3.76	7.33	2.37	1.19	.49	.26	.12
IN.	.44	.67	2.89	1.24	2.93	4.34	8.19	2.73	1.32	.57	.29	.13

CAL YR 1982 TOTAL 31621.2 MEAN 86.6 MAX 800 MIN 9.4 CFSM 1.82 IN 24.71
WTR YR 1983 TOTAL 32947.8 MEAN 90.3 MAX 1220 MIN 3.2 CFSM 1.90 IN 25.75

02027800 BUFFALO RIVER NEAR TYE RIVER, VA

LOCATION.--Lat 37°36'20", long 78°55'25", Nelson County, Hydrologic Unit 02080203, on right bank 35 ft upstream from bridge on State Highway 657, 2.1 mi upstream from mouth, and 3.5 mi southeast of town of Tye River.

DRAINAGE AREA.--147 mi².

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 444.39 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--23 years, 168 ft³/s, 15.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft³/s Aug. 20, 1969, gage height, 27.95 ft, from floodmark, from rating curve extended above 1,800 ft³/s on basis of computation of flow over dam at gage height 11.03 ft and slope-area measurement at gage height 27.95 ft; minimum, 3.2 ft³/s Sept. 8-13, 1966; minimum gage height, 0.28 ft Sept. 9-13, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 3	0215	*8600	12.59	Apr. 24	1330	1640	6.41
Apr. 10	1000	5330	10.39				

Minimum daily discharge, 21 ft³/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	57	147	96	91	178	223	310	156	107	35	29
2	51	57	156	95	266	168	635	279	152	95	35	29
3	49	56	127	99	445	151	2540	266	143	116	35	29
4	49	114	114	94	238	144	735	273	167	89	38	28
5	69	119	107	95	190	140	478	251	154	105	40	27
6	87	74	104	95	174	155	408	240	136	105	38	26
7	58	67	93	93	161	250	384	229	134	84	35	25
8	54	62	88	91	155	276	357	213	132	77	33	24
9	54	63	85	89	140	277	345	218	123	76	32	23
10	62	61	81	92	135	234	2880	204	119	72	30	22
11	59	61	82	99	96	223	1090	198	114	70	31	22
12	57	63	106	92	102	202	784	193	110	67	53	21
13	88	93	91	86	110	185	589	191	105	65	38	25
14	123	71	90	85	125	177	505	189	110	61	33	44
15	75	66	99	86	145	169	568	207	119	59	32	33
16	62	63	561	81	173	157	565	207	103	58	31	29
17	57	62	424	80	225	151	442	253	97	54	31	28
18	56	62	260	78	345	208	404	204	95	51	30	27
19	56	62	210	76	302	642	379	198	136	48	30	25
20	55	63	182	79	265	357	349	224	187	48	29	23
21	56	64	160	85	237	330	330	224	213	46	28	25
22	55	63	141	100	229	281	310	332	143	52	28	41
23	53	65	131	151	269	246	292	364	119	51	28	35
24	53	63	122	163	270	228	1050	244	102	56	28	29
25	70	60	115	122	244	214	679	229	95	53	29	28
26	75	60	111	108	221	196	484	211	87	49	30	28
27	62	60	109	103	196	315	412	196	86	45	28	28
28	59	65	108	100	184	461	372	182	86	42	28	27
29	58	286	106	96	---	290	342	196	87	40	45	27
30	57	176	100	95	---	247	332	187	121	38	38	29
31	57	---	96	94	---	236	---	167	---	36	30	---
TOTAL	1927	2358	4506	2998	5733	7488	19263	7079	3731	2015	1029	836
MEAN	62.2	78.6	145	96.7	205	242	642	228	124	65.0	33.2	27.9
MAX	123	286	561	163	445	642	2880	364	213	116	53	44
MIN	49	56	81	76	91	140	223	167	86	36	28	21
CFSM	.42	.54	.99	.66	1.40	1.65	4.37	1.55	.84	.44	.23	.19
IN.	.49	.60	1.14	.76	1.45	1.89	4.87	1.79	.94	.51	.26	.21

CAL YR 1982 TOTAL 57969 MEAN 159 MAX 1590 MIN 46 CFSM 1.08 IN 14.67
WTR YR 1983 TOTAL 58963 MEAN 162 MAX 2880 MIN 21 CFSM 1.10 IN 14.92

02028500 ROCKFISH RIVER NEAR GREENFIELD, VA

LOCATION.--Lat 37°52'10", long 78°49'25", Nelson County, Hydrologic Unit 02080203, on left bank 50 ft downstream from bridge on State Highway 634, 2.8 mi downstream from confluence of North and South Forks, and 4.1 mi south of Greenfield.

DRAINAGE AREA.--94.6 mi^2.

PERIOD OF RECORD.--April 1943 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 530.29 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 21, 1943, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 139 ft^3/s, 19.95 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,000 ft^3/s Aug. 20, 1969, gage height, 31.2 ft, from floodmarks, from rating curve extended above 8,500 ft^3/s on basis of contracted-opening measurement at gage height 18.11 ft, slope-area measurements at gage heights 17.2 ft, 23.4 ft, and 31.2 ft, and peak runoff comparison with nearby stations; minimum, 0.20 ft^3/s Sept. 8-12, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of 23.4 ft, from floodmarks, discharge, about 30,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0800	2230	6.25	Apr. 10	0830	3790	7.91
Mar. 19	0200	2350	6.40	Apr. 24	1000	1790	5.66
Apr. 3	0100	*5130	9.23				

Minimum discharge, 8.0 ft^3/s Sept. 21, gage height, 0.40 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	31	148	74	68	173	307	270	110	104	19	26
2	17	31	132	72	460	162	911	255	103	142	19	20
3	17	30	117	70	568	150	990	235	98	103	22	18
4	16	173	110	64	355	143	888	220	105	81	28	16
5	35	127	102	65	246	141	679	205	92	148	39	15
6	29	79	107	64	202	162	550	195	84	112	44	14
7	21	67	94	64	173	224	528	185	81	76	40	12
8	19	61	88	62	145	589	467	175	76	64	28	18
9	20	56	84	60	125	525	530	168	72	57	26	14
10	27	53	76	75	114	435	2240	160	70	52	31	12
11	25	48	78	88	100	362	1030	155	65	48	36	11
12	27	46	94	73	97	301	834	145	63	46	60	10
13	44	54	75	65	92	250	719	140	62	42	33	11
14	45	47	73	65	90	214	614	132	64	40	27	16
15	32	46	78	65	95	193	805	155	66	37	25	15
16	26	43	1070	62	114	165	780	260	60	35	23	12
17	23	43	574	61	152	148	679	250	57	33	21	11
18	24	42	371	56	243	599	589	205	59	32	21	10
19	22	40	275	49	243	1300	518	165	72	31	21	9.5
20	21	44	214	50	224	701	464	165	72	29	18	9.0
21	22	50	170	53	211	622	422	195	76	28	18	15
22	22	49	143	59	227	496	394	235	95	46	15	26
23	20	49	128	105	339	426	404	195	74	34	18	15
24	20	47	116	102	342	368	1280	175	64	36	27	13
25	60	44	107	89	307	320	866	164	59	31	24	12
26	72	43	102	82	246	275	697	156	54	30	20	12
27	48	43	94	80	202	438	600	142	52	27	19	12
28	42	51	90	78	181	532	480	134	52	26	18	12
29	39	310	89	74	---	442	380	148	54	24	36	12
30	36	157	79	74	---	381	310	134	64	22	21	20
31	35	---	74	73	---	349	---	118	---	21	18	---
TOTAL	924	2004	5152	2173	5961	11586	20955	5636	2175	1637	815	428.5
MEAN	29.8	66.8	166	70.1	213	374	699	182	72.5	52.8	26.3	14.3
MAX	72	310	1070	105	568	1300	2240	270	110	148	60	26
MIN	16	30	73	49	68	141	307	118	52	21	15	9.0
CFSM	.32	.71	1.76	.74	2.25	3.95	7.39	1.92	.77	.56	.28	.15
IN.	.36	.79	2.03	.85	2.34	4.56	8.24	2.22	.86	.64	.32	.17

CAL YR 1982 TOTAL 43484.6 MEAN 119 MAX 1340 MIN 9.6 CFSM 1.26 IN 17.10
WTR YR 1983 TOTAL 59446.5 MEAN 163 MAX 2240 MIN 9.0 CFSM 1.72 IN 23.38

02029000 JAMES RIVER AT SCOTTSVILLE, VA

LOCATION.--Lat 37°47'50", long 78°29'30", Albemarle County, Hydrologic Unit 02080203, on left bank 900 ft downstream from bridge on State Highway 20 at Scottsville, 6.8 mi upstream from Hardware River, and at mile 188.6.

DRAINAGE AREA.--4,584 mi².

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 727: 1931(m). WSP 972: 1936(M), 1940(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 253.18 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, Apr. 16 to May 24, which are fair. Large diurnal fluctuation caused by powerplants above station. Flow regulated since December 1979 by Moomaw Lake (station 02011795) 197.5 mi upstream. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--59 years, 5,135 ft³/s, 15.21 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 301,000 ft³/s June 22, 1972, gage height, 34.02 ft, from floodmarks, from rating curve extended above 120,000 ft³/s on basis of slope-conveyance study; minimum daily, 300 ft³/s Sept. 13, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1870 reached a stage of 30.7 ft, discharge, about 215,000 ft³/s, and flood in November 1877 reached a stage of 27.9 ft, discharge, about 160,000 ft³/s, from information by local resident. Flood in March 1913 reached a stage of 25.16 ft, from floodmarks, discharge, 121,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 35,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 3	0915	43000	16.00	Apr. 25	----	a>35000	>14.38
Apr. 10	2200	*51000	17.37				

> Greater than.
a Daily mean discharge.

Minimum discharge, 631 ft³/s Sept. 10; minimum daily, 650 ft³/s Sept. 10; minimum gage height, 2.38 ft Oct. 8-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	1740	13400	2960	3390	7670	8650	9400	5760	2610	1090	1060
2	1370	1800	8840	2850	3120	6760	8380	8600	5830	2710	1150	1080
3	1040	1370	9370	2700	11000	6260	33000	8000	5080	2090	1330	1030
4	1240	1720	8090	2570	18000	5390	27300	7500	4550	2490	1070	996
5	1250	2320	6810	2740	14600	5270	20900	7000	4790	2190	1230	787
6	1180	2340	5130	2520	10800	4610	16200	6500	4900	2710	1460	787
7	1140	2290	4710	2360	8610	6050	13200	6000	4850	2280	1400	1070
8	1050	2030	4370	2260	7640	7100	12400	5400	4850	2220	845	780
9	1030	2020	4070	2070	6790	7870	12000	4850	4260	1840	1160	687
10	1240	2080	3650	2270	5340	11100	35600	4650	3850	1710	1250	650
11	1300	1660	3310	2610	5230	12200	48200	4400	3080	1630	1130	819
12	1200	1670	3170	2230	5160	11600	33500	4200	3070	2010	1280	723
13	1310	2050	3210	2270	4810	10300	22100	4100	3010	1670	1240	686
14	1950	1980	3460	2230	4590	8600	16800	3900	2870	1470	1270	787
15	1940	1730	3050	2260	4260	7800	16200	3600	2900	1470	1310	946
16	1690	2050	5810	2040	4670	6900	29000	5000	3020	1350	1240	1280
17	1520	1950	18800	2130	5250	6000	27000	7800	2560	1550	1210	998
18	1440	1580	23700	2150	8000	5700	19000	9300	2550	1190	1190	793
19	1900	1470	14100	2100	11000	15000	15000	10500	2730	1380	1100	659
20	1140	1520	10200	1700	11300	32000	13000	9000	3200	1390	1090	651
21	1130	1540	8390	1500	10200	21900	11000	8100	3670	1180	906	799
22	1220	1610	7220	1800	9520	19000	9800	9500	3250	1420	1090	673
23	1030	1770	5980	2250	9720	20800	9400	11600	3360	1490	955	939
24	1210	1530	5050	2650	11600	16200	20000	12200	2770	1410	1030	968
25	1310	1620	4300	3250	12600	12800	35000	11000	2770	1640	950	819
26	2080	1420	4120	3250	11300	10300	31500	8720	2210	1740	940	779
27	2350	1690	3840	3320	9440	9420	24000	7250	2080	1880	1130	702
28	2840	1760	4100	4000	8130	12900	18500	6490	2200	1610	760	869
29	2600	2990	3610	3320	---	11400	14000	5450	2100	1610	1070	678
30	1900	9970	3410	2910	---	10600	11200	5450	2160	1250	1140	810
31	1640	---	3150	3060	---	9210	---	5760	---	1350	1220	---
TOTAL	46730	63270	210420	78330	236070	338710	611830	221220	104280	54540	35236	25305
MEAN	1507	2109	6788	2527	8431	10930	20390	7136	3476	1759	1137	844
MAX	2840	9970	23700	4000	18000	32000	48200	12200	5830	2710	1460	1280
MIN	1030	1370	3050	1500	3120	4610	8380	3600	2080	1180	760	650
(*)	-45	+136	+255	+4	-18	+4	+9	+8	-34	-156	-157	-173

CAL YR 1982 TOTAL 1950110 MEAN 5343 MAX 64100 MIN 758 MEAN‡ 5358 CFSM‡ 1.17 IN‡ 15.87
WTR YR 1983 TOTAL 2025941 MEAN 5551 MAX 48200 MIN 650 MEAN‡ 5537 CFSM‡ 1.21 IN‡ 16.40

* Change in contents, equivalent in cubic feet per second, in Moomaw Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02030000 HARDWARE RIVER BELOW BRIERY RUN, NEAR SCOTTSVILLE, VA

LOCATION.--Lat 37°48'45", long 78°27'20", Fluvanna County, Hydrologic Unit 02080203, on left bank 75 ft upstream from bridge on State Highway 637, 0.8 mi downstream from Briery Run, 2.4 mi northeast of Scottsville, and 10.8 mi upstream from mouth.

DRAINAGE AREA.--116 mi².

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 952: 1941(M). WSP 1002: 1940, 1943. WSP 1032: 1940, 1944.

GAGE.--Water-stage recorder. Datum of gage is 294.96 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--45 years, 127 ft³/s, 14.87 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,000 ft³/s Aug. 20, 1969, gage height, 31.0 ft, from floodmarks, from rating curve extended above 18,000 ft³/s on basis of slope-area measurements at gage heights 23.8 ft and 31.0 ft; minimum, 0.10 ft³/s Sept. 5-8, 1966; minimum gage height, 0.81 ft Sept. 8, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	1000	3330	12.57	Apr. 15	2330	2350	10.92
Apr. 3	0900	*4200	13.65	Apr. 24	1800	2630	11.43
Apr. 10	1530	2940	12.00				

Minimum discharge, 19 ft³/s Sept. 20-21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	47	98	60	57	149	227	239	121	80	29	39
2	31	44	111	58	171	155	248	227	120	115	29	33
3	30	44	87	60	371	131	2390	217	115	80	28	30
4	28	57	78	56	166	119	634	215	123	72	28	28
5	31	84	70	55	120	114	404	198	116	72	39	28
6	67	57	64	58	108	115	338	184	111	78	50	29
7	39	50	58	57	108	177	356	179	107	67	44	29
8	34	48	54	55	112	893	348	173	103	61	35	29
9	35	47	51	54	98	468	337	170	97	57	34	31
10	52	46	49	58	92	279	2100	160	96	55	72	29
11	44	44	50	74	62	222	890	156	93	52	41	28
12	39	44	76	63	74	180	524	153	90	52	72	28
13	55	61	72	56	94	153	412	149	87	50	42	28
14	80	49	68	56	107	145	364	145	85	48	34	39
15	54	44	72	56	119	135	1060	152	85	48	30	30
16	43	41	473	54	149	124	1040	376	90	46	29	25
17	38	41	296	51	222	119	452	340	81	42	28	24
18	36	41	159	50	306	401	352	276	80	42	27	22
19	36	40	119	50	298	2210	311	170	133	42	28	20
20	36	40	106	52	244	589	276	172	98	41	26	20
21	36	42	96	54	212	438	257	219	149	40	24	21
22	35	41	84	57	206	337	240	274	149	44	22	43
23	34	41	79	114	237	276	234	242	102	44	22	28
24	34	40	76	104	250	249	1860	180	88	50	33	24
25	88	38	73	84	215	227	847	156	81	44	35	24
26	174	36	70	74	219	209	446	146	78	43	30	24
27	81	37	70	68	172	398	348	138	75	40	28	23
28	64	41	68	64	152	712	306	131	73	37	28	22
29	56	233	69	62	---	325	273	144	73	35	48	21
30	50	124	64	61	---	259	257	138	79	34	37	36
31	49	---	60	60	---	240	---	127	---	31	30	---
TOTAL	1541	1642	3020	1935	4731	10548	18131	5946	2978	1642	1082	835
MEAN	49.7	54.7	97.4	62.4	169	340	604	192	99.3	53.0	34.9	27.8
MAX	174	233	473	114	371	2210	2390	376	149	115	72	43
MIN	28	36	49	50	57	114	227	127	73	31	22	20
CFSM	.43	.47	.84	.54	1.46	2.93	5.21	1.66	.86	.46	.30	.24
IN.	.49	.53	.97	.62	1.52	3.38	5.81	1.91	.96	.53	.35	.27

CAL YR 1982 TOTAL 42932 MEAN 118 MAX 1860 MIN 24 CFSM 1.02 IN 13.77
WTR YR 1983 TOTAL 54031 MEAN 148 MAX 2390 MIN 20 CFSM 1.28 IN 17.33

02030500 SLATE RIVER NEAR ARVONIA, VA

LOCATION.--Lat 37°42'10", long 78°22'40", Buckingham County, Hydrologic Unit 02080203, on left bank 250 ft upstream from bridge on State Highway 676, 1.8 mi northwest of Arvonia, 2.9 mi upstream from Hunts Creek, and 3.8 mi upstream from mouth.

DRAINAGE AREA.--226 mi^2.

PERIOD OF RECORD.--April 1926 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1928-29, 1932, 1933-34(M), 1935. WSP 2104: 1928(M), 1935-37(M), 1940(M), 1944(M), 1949(M), 1955(M), drainage area. WDR VA-72-1: 1935, 1937, 1944, 1949, 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 238.78 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Feb. 15, 1936, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 229 ft^3/s, 13.76 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,200 ft^3/s June 22, 1972, gage height, 25.10 ft, from high-water mark in gage house, from rating curve extended above 5,900 ft^3/s on basis of slope-area measurement of peak flow; minimum, 2.0 ft^3/s Sept. 28 to Oct. 2, 1930; minimum gage height, 1.35 ft Sept. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0330	3740	10.83	Apr. 16	0130	2870	9.68
Apr. 3	1200	2270	8.79	Apr. 24	1200	*4250	11.43
Apr. 10	1430	2220	8.71				

Minimum discharge, 14 ft^3/s Sept. 13, gage height, 1.94 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	93	232	121	114	251	285	244	151	105	33	32
2	59	90	290	119	182	314	280	232	147	113	86	29
3	56	89	210	126	655	255	1870	222	141	111	59	28
4	54	114	176	129	320	217	688	239	148	86	42	27
5	53	242	159	120	212	198	393	232	153	80	38	26
6	53	157	149	126	183	194	320	203	139	89	46	24
7	54	117	139	123	184	339	334	191	163	82	43	22
8	53	105	124	118	226	322	475	190	166	74	35	21
9	53	99	117	113	201	344	405	191	136	68	32	21
10	105	96	112	115	178	283	1840	180	148	65	32	18
11	106	93	113	137	146	245	1100	171	151	63	32	16
12	73	93	145	136	198	222	500	168	125	61	41	15
13	85	339	165	120	240	196	366	164	115	60	40	14
14	219	308	133	113	193	183	310	162	109	71	39	21
15	133	174	139	113	239	175	1080	174	105	59	33	30
16	86	140	968	112	346	168	2100	198	103	54	31	34
17	70	123	961	109	496	160	631	316	99	51	29	28
18	64	116	342	103	755	734	420	207	94	55	27	25
19	63	110	238	87	662	3320	350	174	95	54	26	23
20	65	108	203	92	520	1190	304	189	121	50	25	21
21	66	106	184	100	410	536	274	215	147	50	25	21
22	66	105	164	106	363	456	253	375	137	51	22	22
23	64	103	151	193	380	312	245	567	142	56	21	22
24	61	102	145	220	428	263	2980	289	116	62	20	24
25	142	98	140	169	361	238	2020	212	101	63	23	23
26	806	93	137	145	484	215	546	186	91	60	23	22
27	266	97	137	132	330	342	385	227	84	54	22	23
28	155	109	134	126	264	1190	321	188	81	48	21	23
29	122	310	135	120	---	524	284	170	80	43	40	22
30	105	300	136	117	---	338	260	174	87	39	74	28
31	98	---	125	116	---	287	---	165	---	36	41	---
TOTAL	3515	4229	6703	3876	9270	14011	21619	6815	3675	2013	1102	705
MEAN	113	141	216	125	331	452	721	220	123	64.9	35.5	23.5
MAX	806	339	968	220	755	3320	2980	567	166	113	86	34
MIN	53	89	112	87	114	160	245	162	80	36	20	14
CFSM	.50	.62	.96	.55	1.47	2.00	3.19	.97	.54	.29	.16	.10
IN.	.58	.70	1.10	.64	1.53	2.31	3.56	1.12	.60	.33	.18	.12

CAL YR 1982 TOTAL 85317 MEAN 234 MAX 4390 MIN 42 CFSM 1.04 IN 14.04
WTR YR 1983 TOTAL 77533 MEAN 212 MAX 3320 MIN 14 CFSM .94 IN 12.76

02031000 MECHUMS RIVER NEAR WHITE HALL, VA

LOCATION.--Lat 38°06'09", long 78°35'35", Albemarle County, Hydrologic Unit 02080204, on right bank 20 ft downstream from bridge on State Highway 614, 1.5 mi downstream from Rocky Run, 4.0 mi southeast of White Hall, and 4.9 mi upstream from confluence with Moormans River.

DRAINAGE AREA.--95.4 mi^2.

PERIOD OF RECORD.--October 1942 to September 1951, October 1979 to current year. Prior to September 1951, published as Mechum River near Ivy.

GAGE.--Water-stage recorder. Datum of gage is 429.75 ft National Geodetic Vertical Datum of 1929. Oct. 1, 1942, to Sept. 30, 1951, on right bank 20 ft downstream from former highway bridge at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--13 years, 106 ft^3/s, 15.09 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft^3/s Oct. 15, 1942, gage height, 30.3 ft, datum then in use, from floodmarks, from rating curve extended above 8,000 ft^3/s; minimum, 0.6 ft^3/s Sept. 9, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 6, 1979, reached a stage of 24.5 ft, from floodmarks, discharge, about 13,500 ft^3/s, from rating curve extended above 8,300 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1030	2160	10.72	Apr. 3	0230	*9500	20.68
Feb. 2	2030	1400	9.20	Apr. 10	0830	8620	19.80
Mar. 8	0730	717	7.68	Apr. 15	1700	976	8.29
Mar. 19	0430	6450	17.58	Apr. 24	1200	3220	12.85
Mar. 27	2000	685	7.60				

Minimum discharge, 9.2 ft^3/s Sept. 21, gage height, 4.18 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	32	123	60	58	154	195	220	97	67	24	51
2	26	31	126	58	435	144	1060	199	94	92	24	27
3	24	28	98	58	498	127	3250	187	91	65	35	24
4	24	126	88	55	250	118	638	179	99	57	24	21
5	24	132	81	55	170	112	430	163	92	77	39	20
6	26	73	78	56	146	114	328	149	87	66	60	18
7	26	58	69	55	133	151	343	141	87	52	34	16
8	23	52	63	53	120	424	315	141	83	46	24	21
9	24	46	60	51	107	340	402	136	80	44	60	18
10	44	42	56	64	102	245	4390	125	79	40	60	16
11	34	39	58	80	100	205	975	120	77	39	33	15
12	33	39	76	67	98	176	568	118	74	40	47	14
13	55	53	64	62	100	149	451	113	72	38	31	13
14	64	42	60	58	102	135	379	115	70	36	27	20
15	43	40	61	57	107	125	622	138	72	33	24	17
16	36	36	886	56	124	113	571	302	71	31	24	14
17	30	37	353	53	161	105	430	238	72	30	23	14
18	30	36	212	52	262	605	361	177	97	28	24	13
19	29	35	152	50	280	2700	315	152	114	28	24	12
20	28	37	126	51	250	572	280	154	100	28	21	11
21	30	39	107	53	241	457	252	166	150	26	19	12
22	28	38	92	53	260	328	234	185	122	30	18	25
23	26	38	86	92	355	262	229	183	92	28	24	16
24	28	37	81	87	340	225	1790	151	78	33	33	14
25	67	34	77	78	270	197	661	135	71	29	26	14
26	69	33	75	72	232	172	457	119	64	28	21	14
27	51	33	71	67	187	312	361	109	59	26	19	14
28	43	42	69	64	164	441	310	105	58	23	20	14
29	38	267	69	63	---	290	265	113	56	24	64	12
30	36	125	64	62	---	234	238	113	66	25	28	35
31	34	---	61	61	---	214	---	103	---	24	36	---
TOTAL	1100	1700	3742	1903	5652	9946	21100	4749	2524	1233	970	545
MEAN	35.5	56.7	121	61.4	202	321	703	153	84.1	39.8	31.3	18.2
MAX	69	267	886	92	498	2700	4390	302	150	92	64	51
MIN	23	28	56	50	58	105	195	103	56	23	18	11
CFSM	.37	.59	1.27	.64	2.12	3.36	7.37	1.60	.88	.42	.33	.19
IN.	.43	.66	1.46	.74	2.20	3.88	8.23	1.85	.98	.48	.38	.21

CAL YR 1982 TOTAL 36789 MEAN 101 MAX 1730 MIN 14 CFSM 1.06 IN 14.34
WTR YR 1983 TOTAL 55164 MEAN 151 MAX 4390 MIN 11 CFSM 1.58 IN 21.51

02031500 NORTH FORK MOORMANS RIVER NEAR WHITE HALL, VA

LOCATION.--Lat 38°08'25", long 78°45'05", Albemarle County, Hydrologic Unit 02080204, on left bank 0.5 mi upstream from confluence with South Fork, 0.8 mi upstream from city of Charlottesville dam, and 5.1 mi west of White Hall.

DRAINAGE AREA.--11.4 mi^2.

PERIOD OF RECORD.--December 1951 to September 1963, July 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 999 ft, by barometer.

REMARKS.--Records good.

AVERAGE DISCHARGE.--12 years (water years 1953-63, 1983), 16.1 ft^3/s, 19.18 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,400 ft^3/s Aug. 18, 1955, gage height, 7.94 ft, from rating curve extended above 500 ft^3/s on basis of slope-area measurement of peak; no flow at times in October 1953 and October 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1942, reached a stage of 11.7 ft, from floodmarks, discharge, 7,620 ft^3/s on basis of slope-area measurement of peak flow.

EXTREMES FOR PERIOD JULY 1982 TO SEPTEMBER 1983.--Peak discharges above base of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16, 1982	1115	151	3.22				
Feb. 3, 1983	0130	259	3.66	Apr. 10, 1983	0730	686	4.92
Mar. 19, 1983	0015	*1670	6.69	Apr. 24, 1983	1115	644	4.82
Apr. 3, 1983	0015	806	5.19				

July to September 1982: Minimum discharge, 0.30 ft^3/s Sept. 18; minimum gage height, 1.68 ft Sept. 18, 19.

Water year 1983: Minimum discharge, 0.03 ft^3/s Sept. 12, gage height, 1.53 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										7.6	8.1	1.6
2										5.3	4.6	1.6
3										4.7	3.4	1.3
4										5.2	2.7	1.0
5										5.0	2.4	.85
6										4.0	5.7	.83
7										3.4	21	.80
8										4.3	21	.71
9										4.3	15	.85
10										3.5	11	.86
11										11	8.3	.79
12										8.4	9.3	.63
13										4.6	6.7	.55
14										3.7	5.6	.51
15										3.5	5.2	.47
16										3.0	4.6	.50
17										2.7	6.0	.48
18										2.5	7.6	.39
19										3.0	5.2	.32
20										2.3	4.2	.39
21										2.0	3.6	.56
22										1.7	3.1	.93
23										2.7	3.0	.97
24										3.9	2.9	.62
25										2.1	2.4	.51
26										1.7	2.1	2.9
27										1.5	2.1	7.3
28										1.4	2.5	1.6
29										1.3	1.7	.89
30										6.0	1.5	.75
31										14	1.6	---
TOTAL										130.3	184.1	32.46
MEAN										4.20	5.94	1.08
MAX										14	21	7.3
MIN										1.3	1.5	.32
CFSM										.37	.52	.10
IN.										.43	.60	.11

02031500 NORTH FORK MOORMANS RIVER NEAR WHITE HALL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.69	2.7	41	5.4	9.3	27	30	28	11	5.8	.24	1.8
2	.63	2.7	60	5.2	83	34	129	24	9.6	7.3	.29	.79
3	.57	2.7	42	5.1	206	40	474	22	8.8	4.9	.32	.50
4	.54	16	31	5.0	102	40	171	20	11	4.0	.30	.37
5	1.7	21	22	5.0	56	39	85	17	8.7	5.3	.98	.28
6	2.0	13	17	5.1	37	36	58	14	7.6	6.5	1.3	.21
7	1.1	8.9	13	5.1	27	35	45	13	7.0	3.7	1.3	.16
8	.90	7.1	11	4.8	20	65	36	13	6.3	3.0	.77	.13
9	.96	5.9	9.8	4.3	16	109	52	12	5.4	2.6	.50	.09
10	1.9	5.0	9.0	7.5	14	80	489	10	4.9	2.4	.78	.07
11	1.7	4.4	8.9	11	13	54	216	9.3	4.6	2.2	.80	.05
12	2.1	4.3	9.4	10	14	38	121	9.7	4.1	1.9	2.6	.07
13	4.4	5.3	8.1	9.3	8.9	29	84	9.4	3.8	1.7	.86	.66
14	5.4	4.1	7.3	9.0	8.6	22	62	9.3	4.1	1.5	.55	.45
15	3.1	3.8	8.0	9.3	9.0	18	81	9.3	3.5	1.3	.43	.24
16	2.2	3.5	111	8.8	11	15	112	25	3.4	1.2	.34	.16
17	1.7	3.5	89	8.4	15	13	95	30	3.1	1.1	.27	.12
18	1.4	3.3	48	6.9	27	259	71	27	5.6	1.0	.27	.11
19	1.3	3.3	31	6.8	28	742	53	24	8.3	.97	.30	.09
20	1.2	4.6	23	6.3	30	219	41	22	6.7	1.0	.23	.08
21	1.4	5.0	16	5.9	34	132	32	23	14	.92	.15	.13
22	1.2	5.2	13	6.5	56	88	25	26	15	1.1	.12	.55
23	1.1	5.4	11	11	99	64	27	28	13	.89	.36	.30
24	1.1	5.1	9.9	13	116	51	414	27	9.5	1.2	1.3	.19
25	3.8	4.6	8.8	12	74	41	241	23	7.6	.98	.65	.15
26	6.6	4.4	8.2	12	47	31	126	21	5.9	.84	.40	.13
27	4.5	4.4	7.4	12	37	35	82	18	4.9	.67	.27	.10
28	3.5	6.0	6.9	11	30	43	59	15	6.0	.47	.34	.10
29	3.1	75	6.7	11	---	38	44	17	4.7	.35	2.4	.09
30	2.9	48	6.1	11	---	35	35	15	5.9	.29	.76	.82
31	2.7	---	5.6	10	---	34	---	13	---	.24	.80	---
TOTAL	67.39	288.2	699.1	253.7	1227.8	2506	3590	574.0	214.0	67.32	20.98	8.99
MEAN	2.17	9.61	22.6	8.18	43.9	80.8	120	18.5	7.13	2.17	.68	.30
MAX	6.6	75	111	13	206	742	489	30	15	7.3	2.6	1.8
MIN	.54	2.7	5.6	4.3	8.6	13	25	9.3	3.1	.24	.12	.05
CFSM	.19	.84	1.98	.72	3.85	7.09	10.5	1.62	.63	.19	.06	.03
IN.	.22	.94	2.28	.83	4.01	8.18	11.71	1.87	.70	.22	.07	.03

WTR YR 1983 TOTAL 9517.48 MEAN 26.1 MAX 742 MIN .05 CFSM 2.29 IN 31.05

02032250 MOORMANS RIVER NEAR FREE UNION, VA

LOCATION.--Lat 38°08'26", long 78°33'22", Albemarle County, Hydrologic Unit 02080204, on right bank 130 ft upstream from bridge on State Highway 601, 0.4 mi upstream from confluence with Mechums River, 0.8 mi downstream from Wards Creek, and 1.1 mi southeast of Free Union.

DRAINAGE AREA.--74.6 mi².

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 403.11 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Rivanna Water and Sewer Authority at Sugar Hollow reservoir 12.0 mi upstream, capacity, 1,320 acre-ft, from which an average of 6.9 ft³/s is diverted for industrial and municipal use. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,670 ft³/s Apr. 3, 1983, gage height, 15.48 ft, from rating curve extended above 2,700 ft³/s; minimum, 1.3 ft³/s Sept. 16, 17, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1972, reached a stage of 20.2 ft, from floodmarks, discharge, about 8,800 ft³/s, and flood of Sept. 6, 1979, reached a stage of 21.55 ft, from floodmarks, discharge, about 9,700 ft³/s, from rating curve extended above 2,700 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0800	1360	7.28	Apr. 10	0600	4850	14.12
Feb. 2	1900	1080	6.67	Apr. 15	1430	1080	6.66
Mar. 19	0400	4870	14.15	Apr. 24	1300	2240	9.25
Apr. 3	0130	*5670	15.48				

Minimum discharge, 2.0 ft³/s Sept. 20-21, gage height, 2.70 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	20	212	48	53	168	159	168	57	50	3.0	13
2	14	19	193	46	377	161	777	150	52	63	2.8	7.7
3	12	20	163	46	676	155	2500	138	47	37	3.5	6.1
4	12	100	131	44	375	150	732	126	68	31	4.2	5.3
5	12	98	105	42	248	148	452	112	51	39	4.6	4.6
6	51	54	90	42	200	148	326	103	46	40	11	4.2
7	24	44	69	43	168	163	308	96	42	29	11	3.4
8	17	37	56	41	144	249	272	92	39	24	6.6	2.9
9	16	34	49	40	126	340	359	87	35	22	29	2.4
10	21	32	44	46	117	302	2650	76	34	18	20	2.4
11	20	28	44	72	105	240	816	69	34	17	9.3	2.6
12	27	29	53	63	92	195	546	68	31	18	16	4.9
13	39	36	42	56	88	166	372	64	29	16	12	8.0
14	47	28	37	53	88	140	285	63	26	15	9.3	7.2
15	31	26	36	54	90	132	599	68	30	12	8.2	4.9
16	24	24	685	57	114	117	526	156	31	10	6.3	3.5
17	20	23	429	42	134	105	424	142	34	8.5	6.1	3.0
18	19	23	250	40	228	357	316	114	61	7.7	6.3	2.8
19	17	22	185	39	258	2580	256	103	76	7.4	6.3	2.6
20	17	24	148	40	230	825	215	105	72	12	5.3	2.3
21	17	25	124	41	225	519	180	110	154	9.3	4.2	2.9
22	17	24	105	43	272	309	159	130	108	7.7	3.5	4.9
23	14	24	92	71	420	238	182	130	74	7.4	6.1	4.1
24	14	24	83	78	456	205	1520	112	52	8.0	17	3.5
25	35	22	76	71	344	185	794	99	40	8.0	9.3	3.4
26	41	22	71	66	258	159	496	92	36	7.2	7.2	3.3
27	30	22	64	63	208	207	352	78	31	6.9	5.8	3.3
28	26	28	61	60	178	278	272	68	34	5.6	6.9	3.1
29	23	284	60	56	---	170	225	78	31	4.9	24	3.0
30	22	208	53	57	---	175	190	74	36	4.2	11	27
31	21	---	51	56	---	168	---	64	---	4.0	7.2	---
TOTAL	714	1404	3861	1616	6272	9454	17260	3135	1491	549.8	283.0	152.3
MEAN	23.0	46.8	125	52.1	224	305	575	101	49.7	17.7	9.13	5.08
MAX	51	284	685	78	676	2580	2650	168	154	63	29	27
MIN	12	19	36	39	53	105	159	63	26	4.0	2.8	2.3
CFSM	.31	.63	1.68	.70	3.00	4.09	7.71	1.35	.67	.24	.12	.07
IN.	.36	.70	1.93	.81	3.13	4.72	8.61	1.56	.74	.27	.14	.08

CAL YR 1982 TOTAL 35639.2 MEAN 97.6 MAX 2890 MIN 6.0 CFSM 1.31 IN 17.78
WTR YR 1983 TOTAL 46192.1 MEAN 127 MAX 2650 MIN 2.3 CFSM 1.70 IN 23.04

02032400 BUCK MOUNTAIN CREEK NEAR FREE UNION, VA

LOCATION.--Lat 38°09'16", long 78°32'22", Albemarle County, Hydrologic Unit 02080204, on left bank at downstream side of bridge on State Highway 665, 0.2 mi downstream from Piney Creek, 1.6 mi east of Free Union, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--37.0 mi².

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 408.71 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,770 ft³/s Apr. 2, 1983, gage height, 8.57 ft, from rating curve extended above 1,200 ft³/s; minimum, 0.60 ft³/s Sept. 12, 1983, gage height, 0.42 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 22, 1979, reached a stage of 11.12 ft, from floodmarks, discharge, about 6,600 ft³/s, from rating curve extended above 1,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0745	1000	4.80	Apr. 10	0430	3670	8.47
Feb. 2	1830	719	4.16	Apr. 15	1345	675	4.05
Mar. 19	0345	556	3.73	Apr. 24	1015	1580	5.88
Apr. 2	2215	*3770	8.57				

Minimum discharge, 0.60 ft³/s Sept. 12, gage height, 0.42 ft.

DISCHARGE. IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	12	82	20	19	58	56	74	32	24	3.4	2.8
2	6.7	11	70	20	203	54	654	69	31	25	4.6	2.4
3	6.2	11	51	19	203	51	806	67	29	20	8.7	1.9
4	6.3	75	41	18	99	49	213	65	37	21	6.2	1.8
5	7.1	51	36	19	65	44	150	61	30	21	5.2	1.5
6	14	31	33	19	56	49	120	53	28	22	8.7	1.0
7	9.7	25	28	19	51	60	111	50	27	15	15	.90
8	8.9	21	24	17	46	84	101	51	25	14	6.2	.85
9	9.3	19	22	17	41	93	171	47	24	13	13	.80
10	17	17	20	25	38	82	1230	44	24	12	7.6	.75
11	13	16	21	30	36	69	286	42	22	11	5.2	.70
12	16	16	26	25	35	61	174	41	21	10	12	25
13	26	22	21	22	34	56	140	38	20	9.9	5.9	15
14	25	16	21	21	37	50	122	37	19	8.7	4.9	5.5
15	17	15	21	21	40	45	307	36	18	8.0	4.3	2.5
16	13	14	334	20	50	42	213	96	19	7.6	3.7	2.1
17	11	13	121	19	76	38	153	62	19	7.3	3.4	1.9
18	10	13	72	18	125	84	131	47	36	6.6	4.3	1.8
19	10	13	55	17	121	357	116	45	36	6.6	3.7	1.8
20	10	14	45	17	101	172	89	46	44	7.6	2.8	1.6
21	11	16	38	17	96	143	82	59	67	6.9	2.2	2.4
22	9.5	15	34	18	104	101	75	68	41	6.6	1.9	4.3
23	9.1	14	32	33	146	79	82	62	26	6.2	1.9	2.5
24	8.6	14	29	30	125	69	743	49	27	6.9	2.8	2.2
25	28	12	28	26	109	61	261	43	24	6.2	3.4	2.2
26	22	12	28	24	84	55	158	40	20	5.9	2.4	2.1
27	17	11	26	23	69	92	120	36	19	5.2	1.9	2.1
28	15	19	23	22	61	101	101	34	20	4.6	1.8	2.1
29	14	191	23	21	---	72	87	38	19	4.3	7.6	1.8
30	13	68	21	21	---	65	79	35	22	4.0	3.1	29
31	12	---	20	20	---	63	---	32	---	3.7	2.1	---
TOTAL	402.8	797	1446	658	2270	2499	7131	1567	826	330.8	159.9	123.30
MEAN	13.0	26.6	46.6	21.2	81.1	80.6	238	50.5	27.5	10.7	5.16	4.11
MAX	28	191	334	33	203	357	1230	96	67	25	15	29
MIN	6.2	11	20	17	19	38	56	32	18	3.7	1.8	.70
CFSM	.35	.72	1.26	.57	2.19	2.18	6.43	1.36	.74	.29	.14	.11
IN.	.40	.80	1.45	.66	2.28	2.51	7.17	1.57	.83	.33	.16	.12

CAL YR 1982	TOTAL 16608.60	MEAN 45.5	MAX 1590	MIN 4.0	CFSM 1.23	IN 16.69
WTR YR 1983	TOTAL 18210.80	MEAN 49.9	MAX 1230	MIN .70	CFSM 1.35	IN 18.30

02032515 SOUTH FORK RIVANNA RIVER NEAR CHARLOTTESVILLE, VA

LOCATION.--Lat 38°06'06", long 78°27'39", Albemarle County, Hydrologic Unit 02080204, on left bank 10 ft downstream from upstream bridge on U.S. Highway 29, 0.4 mi downstream from South Fork Rivanna River dam, 2.5 mi northeast of Charlottesville city limits, and 2.9 mi upstream from mouth.

DRAINAGE AREA.--260 mi^2.

PERIOD OF RECORD.--August 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 330 ft, from topographic map.

REMARKS.--Records good. Flow regulated by Rivanna Water and Sewer Authority at South Fork Rivanna and Sugar Hollow reservoirs, combined capacity, 6,540 acre-ft, from which an average of 13.4 ft^3/s is diverted for industrial and municipal use. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft^3/s Sept. 6, 1979, gage height, 23.50 ft, from floodmarks, from rating curve extended above 12,000 ft^3/s; minimum daily, 11 ft^3/s June 28, 29, 30, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,100 ft^3/s Apr. 3, gage height, 20.50 ft; minimum, 12 ft^3/s Sept. 21, gage height, 2.12 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	87	447	160	164	470	454	516	241	168	22	104
2	46	83	472	158	754	440	1170	475	234	276	26	66
3	41	81	371	156	1750	420	7030	442	219	180	79	50
4	39	178	312	146	867	370	1830	427	261	156	43	43
5	39	408	274	146	544	340	895	382	232	164	36	39
6	60	213	252	148	454	380	848	352	210	170	89	31
7	79	166	217	144	398	560	810	335	206	125	115	24
8	62	144	190	140	360	1100	771	335	194	120	55	20
9	62	130	176	136	315	880	733	328	174	110	148	24
10	92	123	164	160	186	780	7310	296	170	100	258	20
11	87	113	166	221	252	640	2300	287	170	95	98	16
12	94	112	210	194	245	520	1400	278	160	98	100	16
13	140	140	180	176	250	450	1030	269	150	88	83	72
14	192	119	152	166	265	380	812	267	144	80	62	43
15	125	108	160	164	280	348	1500	301	142	74	55	32
16	94	102	1900	162	335	315	1600	700	150	70	50	20
17	81	98	1120	148	387	294	1100	642	154	60	46	19
18	74	98	622	140	634	653	870	412	185	55	51	17
19	75	98	460	112	740	5370	717	360	356	53	51	16
20	75	102	382	120	682	1870	606	368	268	60	44	14
21	79	110	322	140	630	1280	533	393	492	57	34	16
22	75	108	276	144	699	885	487	470	441	51	31	38
23	66	106	250	230	990	614	475	490	276	51	38	29
24	62	104	232	250	1070	550	3960	430	215	53	74	22
25	154	92	217	219	900	487	2110	400	184	51	60	19
26	213	92	210	200	720	424	1240	340	160	46	50	19
27	134	92	196	188	620	600	950	285	148	43	41	19
28	112	113	190	182	550	1100	758	265	150	38	38	17
29	100	804	188	174	---	610	642	287	146	32	100	16
30	92	507	172	172	---	530	564	285	158	26	83	129
31	89	---	164	172	---	487	---	258	---	25	53	---
TOTAL	2786	4831	10644	5168	16041	24147	45505	11675	6390	2775	2113	1010
MEAN	89.9	161	343	167	573	779	1517	377	213	89.5	68.2	33.7
MAX	213	804	1900	250	1750	5370	7310	700	492	276	258	129
MIN	39	81	152	112	164	294	454	258	142	25	22	14
*FT^3/S	13.7	13.0	11.8	12.1	13.1	12.4	12.6	13.0	13.8	15.0	14.4	15.3

CAL YR 1982 TOTAL 109214 MEAN 299 MAX 5920 MIN 26 *FT^3/S 13.3
WTR YR 1983 TOTAL 133085 MEAN 365 MAX 7310 MIN 14 *FT^3/S 13.4

* Diversion, in cubic feet per second, by City of Charlottesville; records furnished by Rivanna Water and Sewer Authority.

02032680 NORTH FORK RIVANNA RIVER NEAR PROFFIT, VA

LOCATION.--Lat 38°05'16", long 78°24'44", Albemarle County, Hydrologic Unit 02080204, on left bank 50 ft downstream from bridge on State Highway 649, 1.9 mi southeast of Proffit, and 2.2 mi upstream from confluence wit South Fork.

DRAINAGE AREA.--176 mi².

PERIOD OF RECORD.--April 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 323.43 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Rivanna Water and Sewer Authority diverts about 0.2 ft³/s daily for municipal water supply 7.8 mi above station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--13 years, 255 ft³/s, 19.68 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,800 ft³/s June 21, 1972, gage height, 30.4 ft, from floodmarks, from rating curve extended above 9,000 ft³/s; minimum, 1.8 ft³/s Oct. 6, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 3	0900	*7210	17.20	Apr. 24	1700	4680	14.72
Apr. 10	1430	6850	16.93	June 21	1930	1660	8.08
Apr. 15	2230	2730	11.15				

Minimum discharge, 16 ft³/s Sept. 12, gage height, 1.92 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	41	222	90	90	324	332	371	181	94	25	23
2	24	39	262	90	172	314	358	348	173	92	25	24
3	24	38	208	89	900	293	4540	306	158	142	30	22
4	23	52	176	87	532	272	1150	288	173	97	28	22
5	24	140	142	84	387	259	690	267	176	99	27	22
6	24	107	122	85	322	257	529	249	150	90	30	20
7	24	82	103	82	293	306	480	233	135	79	134	19
8	26	67	93	79	283	617	483	228	127	65	40	19
9	24	58	86	77	267	636	456	236	117	60	89	18
10	36	52	82	80	257	497	4170	215	108	56	122	17
11	39	49	78	119	205	436	1570	199	106	53	49	17
12	40	40	94	129	220	384	776	192	101	50	60	16
13	52	60	93	113	255	342	556	184	96	48	45	62
14	77	60	86	106	272	306	444	179	92	46	38	43
15	50	54	80	99	285	280	1100	189	89	44	35	30
16	39	50	714	97	293	254	1460	416	87	43	32	25
17	32	48	627	89	332	233	794	623	84	41	31	22
18	30	45	389	84	467	272	583	418	82	40	30	20
19	29	44	303	88	548	823	488	345	218	38	31	20
20	30	43	228	90	521	605	423	324	376	40	30	20
21	31	44	220	100	478	507	379	316	870	38	28	19
22	32	45	186	106	486	459	348	407	550	40	26	29
23	30	47	163	145	534	376	329	450	236	40	25	26
24	30	47	150	192	610	337	2820	358	155	39	26	24
25	52	44	137	153	526	306	1510	309	125	38	26	22
26	96	42	131	131	488	280	825	270	106	36	25	22
27	71	41	119	121	402	324	596	246	92	34	24	22
28	57	43	113	112	355	762	497	220	90	31	23	21
29	49	455	110	104	---	475	428	215	87	29	24	21
30	44	254	103	101	---	384	389	218	92	27	25	84
31	42	---	94	97	---	353	---	199	---	26	22	---
TOTAL	1207	2231	5714	3219	10780	12273	29503	9018	5232	1695	1205	771
MEAN	38.9	74.4	184	104	385	396	983	291	174	54.7	38.9	25.7
MAX	96	455	714	192	900	823	4540	623	870	142	134	84
MIN	23	38	78	77	90	233	329	179	82	26	22	16
CFSM	.22	.42	1.05	.59	2.19	2.25	5.59	1.65	.99	.31	.22	.15
IN.	.26	.47	1.21	.68	2.28	2.59	6.24	1.91	1.11	.36	.25	.16

CAL YR 1982 TOTAL 79035 MEAN 217 MAX 4930 MIN 18 CFSM 1.23 IN 16.71
WTR YR 1983 TOTAL 82848 MEAN 227 MAX 4540 MIN 16 CFSM 1.29 IN 17.51

02034000 RIVANNA RIVER AT PALMYRA, VA

LOCATION.--Lat 37°51'28", long 78°15'58", Fluvanna County, Hydrologic Unit 02080204, on left bank 10 ft upstream from bridge on U.S. Highway 15 at Palmyra, 0.5 mi upstream from Cunningham Creek, and 15 mi upstream from mouth.

DRAINAGE AREA.--664 mi^2.

PERIOD OF RECORD.--October 1933 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 802: 1936(M). WSP 852: 1937. WSP 892: 1934-35. WSP 1303: 1945-46(M). WSP 1503: 1956. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 210.39 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 24, 1942, water-stage recorder at site 200 ft downstream at same datum. Oct. 24, 1942, to Dec. 18, 1947, nonrecording gage 10 ft downstream at same datum.

REMARKS.--Records good. Some diurnal fluctuation at times mostly at low and medium flow by South Fork Rivanna River Reservoir. National Weather Service gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--50 years, 718 ft^3/s, 14.68 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,000 ft^3/s Aug. 20, 1969, gage height, 39.85 ft, from rating curve extended above 76,000 ft^3/s on basis of contracted-opening measurement of peak flow and velocity-area study; minimum, 5.2 ft^3/s Sept. 9-11, 1966, gage height, 2.13 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	1730	9800	16.49	Apr. 16	0200	9490	16.09
Apr. 3	2030	*17300	22.02	Apr. 24	2300	13800	20.20
Apr. 11	0130	17000	21.87				

Minimum discharge, 53 ft^3/s Sept. 13, 21, gage height, 2.54 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	191	914	322	290	878	1130	1200	505	328	83	126
2	125	186	1140	318	494	869	1040	1090	486	422	80	152
3	121	178	870	315	3450	774	12400	1010	472	439	129	120
4	113	193	716	299	1960	711	6530	958	533	334	152	100
5	113	693	620	282	1170	672	2640	839	587	320	114	90
6	234	519	559	285	894	656	2010	743	481	585	199	82
7	151	358	492	282	814	922	1820	682	441	355	416	78
8	148	300	439	267	789	3290	1890	650	424	275	263	70
9	131	270	404	262	674	2600	1580	680	383	248	148	63
10	149	249	377	270	608	1820	9580	599	359	233	653	62
11	188	234	365	394	573	1430	10100	557	354	216	322	60
12	185	223	465	411	441	1150	3280	527	341	206	353	56
13	222	278	485	348	708	959	2340	508	326	200	236	56
14	421	302	394	316	603	834	1850	494	319	189	173	162
15	320	248	380	309	624	761	3650	560	305	180	139	120
16	228	227	2510	303	828	689	6390	1590	309	174	117	91
17	177	207	2940	288	1120	636	2900	2350	307	160	111	73
18	149	210	1480	268	1670	980	2180	1180	299	143	111	64
19	139	209	1070	230	1860	7070	1790	881	730	143	123	61
20	145	209	866	236	1680	3730	1470	837	560	171	123	57
21	151	216	716	260	1430	2470	1250	888	1500	157	109	58
22	156	225	591	292	1460	1980	1110	1270	1810	149	93	90
23	149	221	518	457	1690	1400	1030	1310	869	139	87	103
24	139	215	471	575	2080	1230	8530	1040	568	136	155	84
25	214	213	436	471	1670	1090	7940	809	437	134	132	72
26	595	197	411	404	1530	938	3110	703	364	129	120	66
27	378	199	398	367	1150	1240	2270	676	325	119	100	64
28	283	207	383	337	962	3480	1820	568	299	111	90	63
29	240	1320	396	319	---	1870	1510	570	305	103	90	61
30	214	1410	378	307	---	1360	1330	623	301	96	142	148
31	200	---	337	303	---	1200	---	561	---	87	126	---
TOTAL	6310	9907	22521	10097	33222	49689	106470	26953	15299	6681	5289	2552
MEAN	204	330	726	326	1187	1603	3549	869	510	216	171	85.1
MAX	595	1410	2940	575	3450	7070	12400	2350	1810	585	653	162
MIN	113	178	337	230	290	636	1030	494	299	87	80	56
CFSM	.31	.50	1.09	.49	1.79	2.41	5.35	1.31	.77	.33	.26	.13
IN.	.35	.56	1.26	.57	1.86	2.78	5.96	1.51	.86	.37	.30	.14

CAL YR 1982 TOTAL 262697 MEAN 720 MAX 10200 MIN 88 CFSM 1.08 IN 14.72
WTR YR 1983 TOTAL 294990 MEAN 808 MAX 12400 MIN 56 CFSM 1.22 IN 16.53

02034500 WILLIS RIVER AT LAKESIDE VILLAGE, VA

LOCATION.--Lat 37°40'00", long 78°10'00", Cumberland County, Hydrologic Unit 02080205, on left bank 15 ft upstream from bridge on State Highway 690, 0.4 mi east of Lakeside Village, 6.9 mi upstream from mouth, and 7.7 mi downstream from Reynolds Creek.

DRAINAGE AREA.--262 mi².

PERIOD OF RECORD.--April 1926 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1978, published as Willis River at Flanagan Mills.

REVISED RECORDS.--WSP 872: 1936-37. WSP 892: 1928-29, 1932-34(M). WSP 972: 1937, 1940. WSP 1203: 1929. WSP 1303: 1928-30(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 178.98 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 3, 1935, nonrecording gage at site 1,300 ft upstream at same datum.

REMARKS.--Records good. Regulation of flow from Trice Lake 0.4 mi upstream, total capacity, about 1,100 acre-ft, tributary to Willis River, slightly affects flow at gage. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--57 years, 253 ft³/s, 13.11 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 24,000 ft³/s June 22, 1972; maximum gage height, 29.8 ft June 22, 1972, from floodmarks (backwater from James River); minimum discharge, 1.5 ft³/s Sept. 13, 14, 1966, gage height, 2.26 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 21	1330	1970	13.73	Apr. 25	1630	2100	14.00
Apr. 16	1930	*2140	14.07				

Minimum discharge, 12 ft³/s Sept. 12, gage height, 3.21 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	99	309	147	121	344	607	359	184	82	32	34
2	56	92	319	140	164	482	467	305	169	91	32	28
3	52	88	298	142	472	478	845	276	157	94	30	25
4	49	91	245	154	418	372	1100	285	152	86	30	22
5	47	114	204	205	301	294	1030	292	155	84	29	20
6	47	202	201	377	233	259	996	258	149	93	29	19
7	46	213	238	282	220	337	728	232	155	104	29	18
8	45	153	185	216	276	406	711	215	165	90	27	16
9	46	122	146	180	288	505	668	207	148	79	25	15
10	82	110	127	161	252	475	1150	197	133	74	24	15
11	103	102	120	161	228	391	1590	185	122	68	24	14
12	89	97	148	176	200	324	1630	176	115	64	26	13
13	86	334	205	157	230	270	1180	168	110	62	31	13
14	154	481	199	136	250	237	633	164	104	72	31	19
15	144	383	180	128	283	215	819	165	98	79	29	21
16	111	262	575	125	425	200	1980	377	95	65	29	21
17	87	197	954	120	592	185	2070	774	91	59	26	21
18	74	165	950	115	787	377	1790	530	88	54	25	19
19	66	145	920	100	873	1410	1220	337	86	53	24	19
20	63	132	593	98	902	1720	746	277	88	51	23	18
21	61	124	366	94	818	1910	525	277	95	48	22	17
22	60	121	279	106	653	1810	405	715	177	49	20	17
23	60	117	235	173	565	1500	343	1330	155	53	19	16
24	57	113	210	249	538	1110	1260	1310	116	55	19	16
25	100	109	196	228	515	557	2020	1230	103	58	17	15
26	476	102	184	196	572	385	1990	577	92	56	17	15
27	441	100	173	170	506	443	1530	378	85	53	16	15
28	326	108	162	154	400	1170	958	281	80	49	16	15
29	194	221	157	141	---	1330	630	241	77	44	16	15
30	136	363	161	131	---	1440	467	222	79	38	16	17
31	111	---	152	126	---	1050	---	206	---	34	26	---
TOTAL	3531	5060	9391	5088	12082	21986	32088	12546	3623	2041	759	548
MEAN	114	169	303	164	432	709	1070	405	121	65.8	24.5	18.3
MAX	476	481	954	377	902	1910	2070	1330	184	104	32	34
MIN	45	88	120	94	121	185	343	164	77	34	16	13
CFSM	.44	.65	1.16	.63	1.65	2.71	4.08	1.55	.46	.25	.09	.07
IN.	.50	.72	1.33	.72	1.72	3.12	4.56	1.78	.51	.29	.11	.08

CAL YR 1982 TOTAL 91993 MEAN 252 MAX 2850 MIN 27 CFSM .96 IN 13.06
WTR YR 1983 TOTAL 108743 MEAN 298 MAX 2070 MIN 13 CFSM 1.14 IN 15.44

02035000 JAMES RIVER AT CARTERSVILLE, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°40'15", long 78°05'10", Goochland County, Hydrologic Unit 02080205, on left bank 200 ft downstream from bridge on State Highway 45 between Pemberton and Cartersville, 1.8 mi downstream from Willis River, and at mile 156.4.

DRAINAGE AREA.--6,257 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1898 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1203: 1901-2(M), 1923-25(M), 1928(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 163.90 ft National Geodetic Vertical Datum of 1929. Prior to June 4, 1927, nonrecording gage at same site and datum.

REMARKS.--Records good. Moderate diurnal fluctuation caused by powerplants above station. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--85 years, 7,058 ft³/s, 15.32 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 362,000 ft³/s June 22, 1972, gage height, 37.87 ft, from floodmarks, from rating curve extended above 160,000 ft³/s on basis of slope-conveyance study; minimum, 316 ft³/s Sept. 13, 14, 1966, gage height, 0.02 ft; minimum daily, 330 ft³/s Sept. 14, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 40,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 20	2030	43800	14.81	Apr. 16	1000	44400	14.96
Apr. 3	2100	60400	18.20	Apr. 25	1730	54600	17.08
Apr. 11	1200	*71900	20.26				

Minimum discharge, 807 ft³/s Sept. 11, gage height, 0.56 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2310	2040	17700	4030	4110	10100	12000	12900	6730	3070	1240	1480
2	2100	2440	12600	3850	4110	9670	11100	11500	7030	3270	1150	1360
3	1790	1800	10800	3740	11300	8900	39300	10500	6330	3460	1410	1400
4	1640	2210	10600	3540	22000	7680	49100	10100	5880	2810	1390	1280
5	1700	2590	8700	3500	19100	7120	30300	9360	6270	2910	1210	1230
6	1870	4070	7000	3770	14400	6370	22900	8430	5550	3070	1500	979
7	1760	3270	5910	3510	11300	7480	18700	7920	6080	3520	1760	1020
8	1650	3050	5360	3310	9890	10600	17500	7140	5600	2770	1880	1250
9	1540	2710	5140	3150	9010	13800	16200	6840	5580	2570	1080	959
10	1710	2570	4640	3000	7350	13100	34800	6500	4820	2200	1580	868
11	1880	2730	4290	3200	6930	15900	69600	6160	4460	1870	1960	822
12	1880	2070	4180	3670	6400	14400	52400	5890	3950	2010	1660	998
13	1860	2790	4320	3210	6470	12600	31900	5520	3780	2330	1780	924
14	2580	3880	4510	3120	6530	10900	23300	5490	3630	1880	1600	943
15	3120	3000	3980	3020	6060	9740	22600	5010	3410	1810	1480	1170
16	2470	2550	5960	3090	6800	9020	41600	6260	3670	1550	1510	1370
17	2380	2870	21600	2790	7860	7800	37500	11100	3520	1710	1370	1750
18	1930	2300	30000	2880	11200	7890	28900	12800	3150	1490	1360	1270
19	1930	2290	20700	2650	15300	27500	22600	15300	3300	1450	1320	1030
20	2300	1960	13800	2220	16500	41900	18400	12700	3970	1580	1260	883
21	1540	2040	10900	2470	14700	34800	15100	10700	4950	1450	1220	862
22	1660	2050	9300	2720	13400	25700	13000	12500	6690	1530	1010	1040
23	1610	2100	7690	3030	13100	26400	11500	16200	5030	1610	1240	955
24	1490	2270	6660	4140	15200	21900	27000	17200	4680	1600	1110	1280
25	1780	1950	5660	4320	16400	17100	51900	15100	3430	1670	1250	1290
26	3490	2030	5340	4460	16100	13800	47900	12100	3410	1800	1120	1080
27	4130	1930	5040	4380	13400	12100	31700	9480	2740	2220	1090	1010
28	3670	2190	4940	4520	11200	21400	24100	8310	2610	1770	1280	930
29	3590	3060	4620	4720	---	18000	18600	7220	2970	1800	906	1090
30	3180	7890	4510	4070	---	15600	15000	6900	2420	1520	1300	959
31	2890	---	4270	3890	---	13500	---	7010	---	1380	1510	---
TOTAL	69430	80700	270720	107970	316120	472770	856500	300140	135640	65680	42536	33482
MEAN	2240	2690	8733	3483	11290	15250	28550	9682	4521	2119	1372	1116
MAX	4130	7890	30000	4720	22000	41900	69600	17200	7030	3520	1960	1750
MIN	1490	1800	3980	2220	4110	6370	11100	5010	2420	1380	906	822
CFSM	.36	.43	1.40	.56	1.80	2.44	4.56	1.55	.72	.34	.22	.18
IN.	.41	.48	1.61	.64	1.88	2.81	5.09	1.78	.81	.39	.25	.20

CAL YR 1982 TOTAL 2625840 MEAN 7194 MAX 67300 MIN 1280 CFSM 1.15 IN 15.61
WTR YR 1983 TOTAL 2751688 MEAN 7539 MAX 69600 MIN 822 CFSM 1.21 IN 16.36

02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1948, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to January 1976, October 1980 to May 1981.
WATER TEMPERATURES: April 1968 to January 1976, October 1980 to May 1981.
SUSPENDED-SEDIMENT DISCHARGE: October 1980 to May 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
NOV 16...	0945	2340	220	7.8	8.5	2.4	11.2	29	90	74
JAN 12...	0915	3930	173	7.7	6.0	2.1	12.0	13	36	65
MAR 03...	1330	8000	125	7.5	10.0	4.2	12.0	K6	K10	51
APR 20...	1300	18400	112	7.2	9.0	18	11.0	46	82	44
JUN 02...	1000	6860	135	7.8	19.5	2.9	8.6	29	--	57
AUG 23...	1100	1300	240	8.5	30.0	<1.0	7.5	13	380	87

< Actual value is known to be less than the value shown.
K Result based on colony count outside optimal range.

DATE	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 16...	12	22	4.7	9.2	2.0	63	16	17	.10	5.9
JAN 12...	7	19	4.3	7.8	1.5	58	15	8.6	<.10	7.0
MAR 03...	8	15	3.3	4.0	1.2	43	11	5.6	.10	5.8
APR 20...	6	13	2.8	2.4	1.0	38	10	3.3	<.10	8.0
JUN 02...	7	17	3.6	4.2	1.2	50	11	4.7	<.10	5.1
AUG 23...	15	25	6.0	14	2.4	72	18	18	.10	6.8

< Actual value is known to be less than the value shown.

02035000 JAMES RIVER AT CARTERSVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV										
16...	125	115	.15	.020	<.10	.070	.060	.070	40	1
JAN										
12...	100	98	.35	.030	.20	.030	.030	.030	--	--
MAR										
03...	73	72	.24	.020	<.10	.050	.030	.030	20	1
APR										
20...	108	64	.32	.020	.20	.060	.030	.020	40	<1
JUN										
02...	--	77	.11	<.010	<.10	.050	.040	.040	--	--
AUG										
23...	144	134	<.10	.030	.30	.150	.140	.130	70	1

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV										
16...	49	<1	<1	<1	<3	6	150	2	7	9
JAN										
12...	--	--	--	--	--	--	--	--	--	--
MAR										
03...	33	<1	<1	4	<3	2	73	4	<4	6
APR										
20...	31	<1	<1	2	<3	<1	73	3	<4	8
JUN										
02...	--	--	--	--	--	--	--	--	--	--
AUG										
23...	61	<1	<1	<1	<3	3	30	4	6	10

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV										
16...	.1	<10	1	<1	1	[illegible]6	<6.0	5	5	90
JAN										
12...	--	--	--	--	--	--	--	--	3	96
MAR										
03...	.1	<10	1	<1	<1	63	<6.0	<3	5	88
APR										
20...	.1	<10	1	<1	<1	47	<6.0	<3	38	--
JUN										
02...	--	--	--	--	--	--	--	--	8	90
AUG										
23...	.2	<10	1	<1	<1	130	<6.0	<3	4	56

< Actual value is known to be less than the value shown.

02036500 FINE CREEK AT FINE CREEK MILLS, VA

LOCATION.--Lat 37°35'52", long 77°49'12", Powhatan County, Hydrologic Unit 02080205, on right bank 75 ft downstream from bridge on State Highway 711 at Fine Creek Mills, 0.8 mi upstream from mouth, and 6.7 mi northeast of Powhatan.

DRAINAGE AREA.--22.1 mi².

PERIOD OF RECORD.--July 1944 to current year.

REVISED RECORDS.--WSP 1203: 1948. WSP 1303: 1945(M). WSP 1383: 1954. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 156.59 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1953, nonrecording gage and crest-stage gage at site 75 ft upstream at same datum.

REMARKS.--Records good except those for period of no gage-height record, Apr. 17 to May 23, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--39 years, 20.0 ft³/s, 12.29 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,180 ft³/s Oct. 6, 1972, gage height, 9.02 ft, from rating curve extended above 2,600 ft³/s; minimum daily, 0.08 ft³/s Oct. 1, 1968; minimum gage height, 1.53 ft Sept. 30, Oct. 1, 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 17	0115	263	3.07	Apr. 24	----	Unknown	Unknown
Apr. 16	0330	*1280	5.07	May 23	Unknown	418	a3.45

a From high-water mark.

Minimum discharge, 0.38 ft³/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	6.2	25	16	10	33	34	23	13	10	1.3	.80
2	3.5	6.9	29	14	21	59	29	22	13	9.5	1.3	.80
3	3.0	7.5	20	17	55	41	53	21	12	7.7	1.2	.80
4	2.8	13	16	15	30	33	41	30	11	5.9	1.2	.70
5	2.8	35	14	17	20	25	29	22	12	6.6	1.1	.60
6	2.7	25	26	26	18	25	26	19	11	12	1.4	.60
7	2.6	12	31	21	23	35	32	18	19	9.8	1.5	.50
8	2.6	9.2	20	17	27	34	40	17	51	5.9	1.3	.50
9	2.7	7.2	15	14	22	32	35	16	28	5.0	1.2	.50
10	4.2	5.8	12	15	19	28	110	15	16	4.6	1.1	.47
11	4.7	5.0	14	19	15	25	85	14	12	3.9	1.1	.47
12	5.0	5.3	24	16	19	23	45	13	10	3.7	1.6	.44
13	10	51	25	13	23	20	34	13	8.6	3.2	1.4	.60
14	19	56	18	12	25	18	27	12	7.8	3.0	1.3	.80
15	14	28	17	12	29	17	105	12	5.9	2.7	1.7	.61
16	6.6	19	113	12	35	17	570	16	5.0	2.7	1.6	.54
17	4.4	14	165	11	47	16	270	30	5.0	2.5	1.1	.58
18	4.2	11	57	11	65	46	80	18	5.5	2.2	.90	.60
19	3.9	9.7	35	9.2	73	69	50	14	5.0	2.5	.80	.60
20	3.8	9.5	27	7.4	62	42	35	15	28	2.4	.67	.50
21	3.7	8.5	23	8.3	51	56	28	18	117	2.1	.54	.80
22	3.4	7.8	18	12	43	53	23	45	54	2.0	.62	.90
23	3.3	7.7	15	26	51	33	20	250	24	1.9	.92	.63
24	3.4	7.3	14	24	48	26	300	63	15	2.0	1.1	.57
25	20	5.9	13	18	41	23	200	30	11	2.1	1.1	.54
26	38	5.2	12	14	41	20	100	21	8.8	2.0	1.0	.50
27	21	6.5	12	13	32	36	40	18	6.8	1.8	.91	.47
28	11	9.9	13	12	26	146	30	14	7.7	1.5	1.0	.47
29	8.2	24	18	11	---	80	28	15	8.6	1.4	1.0	.50
30	5.5	26	23	11	---	43	25	15	10	1.3	1.0	1.5
31	5.1	---	18	11	---	35	---	15	---	1.3	.90	---
TOTAL	228.8	445.1	882	454.9	971	1189	2524	864	541.7	125.2	34.86	18.89
MEAN	7.38	14.8	28.5	14.7	34.7	38.4	84.1	27.9	18.1	4.04	1.12	.63
MAX	38	56	165	26	73	146	570	250	117	12	1.7	1.5
MIN	2.6	5.0	12	7.4	10	16	20	12	5.0	1.3	.54	.44
CFSM	.33	.67	1.29	.67	1.57	1.74	3.81	1.26	.82	.18	.05	.03
IN.	.39	.75	1.48	.77	1.63	2.00	4.25	1.45	.91	.21	.06	.03

CAL YR 1982 TOTAL 6309.50 MEAN 17.3 MAX 165 MIN 1.3 CFSM .79 IN 10.62
WTR YR 1983 TOTAL 8279.45 MEAN 22.7 MAX 570 MIN .44 CFSM 1.03 IN 13.94

02037000 JAMES RIVER AND KANAWHA CANAL NEAR RICHMOND, VA

LOCATION.--Lat 37°33'52", long 77°34'28", Henrico County, Hydrologic Unit 02080205, on left bank 75 ft downstream from Canal bridge, 400 ft downstream from head gates, 1,200 ft north of north end of Bosher Dam on James River, 1.6 mi upstream from Huguenot Memorial Bridge, and 2.0 mi west of city limits of Richmond.

PERIOD OF RECORD.--September 1936 to current year.

GAGE.--Water-stage recorder. Datum of gage is 106.07 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1938, at datum 3.06 ft higher.

REMARKS.--Records fair. Canal diverts from James River 1,200 ft above Bosher Dam and discharges into river at several points below gaging station near Richmond. Above 2,540 ft^3/s, gage height, 14.5 ft, there is interchange of flow with James River; discharge above 2,540 ft^3/s included in discharge for James River near Richmond (station 02037500). Figures given show flow in canal only. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--47 years, 768 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 29.1 ft June 23, 1972, from floodmarks, interchange of flow with James River makes maximum discharge indeterminate; no flow at times when head gates were closed.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 481 ft^3/s Sept. 30; maximum gage height, 7.85 ft Apr. 15, backwater from construction; minimum daily discharge, 0.60 ft^3/s Oct. 1 to Sept. 20, result of seepage around closed head gates.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
2	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
3	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
4	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
5	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
6	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
7	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
8	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
9	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
10	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
11	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
12	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
13	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
14	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
15	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
16	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
17	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
18	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
19	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
20	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
21	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	3.7
22	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	11
23	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	13
24	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	14
25	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	15
26	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	16
27	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	13
28	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	86
29	.60	.60	.60	.60	---	.60	.60	.60	.60	.60	.60	374
30	.60	.60	.60	.60	---	.60	.60	.60	.60	.60	.60	481
31	.60	---	.60	.60	---	.60	---	.60	---	.60	.60	---
TOTAL	18.60	18.00	18.60	18.60	16.80	18.60	18.00	18.60	18.00	18.60	18.60	1038.70
MEAN	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	34.6
MAX	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	481
MIN	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60

CAL YR 1982 TOTAL 153755.10 MEAN 421 MAX 1740 MIN .60
WTR YR 1983 TOTAL 1239.70 MEAN 3.40 MAX 481 MIN .60

02037500 JAMES RIVER NEAR RICHMOND, VA

LOCATION (corrected).--Lat 37°33'47", long 77°32'50", Henrico County, Hydrologic Unit 02080205, on left bank 0.2 mi upstream from Huguenot Memorial Bridge, 0.5 mi southwest of city limits of Richmond, 1.7 mi downstream from Bosher Dam, 3.3 mi upstream from Powhite Creek, and at mile 116.6.

DRAINAGE AREA.--6,758 mi².

PERIOD OF RECORD.--October 1934 to current year. Gage-height records collected in vicinity of Mayo's Bridge, at mile 109.5, 1876-1956, and at mile 108.7 since 1957, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936(M). WSP 1433: 1951(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Control is Williams Island dams which divert flow for city of Richmond water supply. Datum of gage is 98.82 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. City of Richmond takes from 40 ft³/s to 90 ft³/s for water supply from river below gage except during periods of low flow when supply is obtained from James River and Kanawha Canal. Flow regulated by powerplants above station. Above 18.2 ft stage there is interchange of flow with James River and Kanawha Canal. Records of daily discharge include diversion by city of Richmond but do not include flow in James River and Kanawha Canal (station 02037000) which diverts around station. National Weather Service telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--49 years, 7,512 ft³/s, 15.10 in/yr, includes flow in James River and Kanawha Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 313,000 ft³/s, includes canal flow, June 23, 1972, gage height, 28.62 ft; minimum daily, about 10 ft³/s Sept. 8-15, 1966, Sept. 30, Oct. 5, 6, 1968, Oct. 8-10, 1970; minimum daily discharge of James River and James River and Kanawha Canal combined, 214 ft³/s Oct. 5, 1941, caused by recharging of the pool above Bosher Dam after the canal gates were closed.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 4	1200	58300	14.14	Apr. 16	1730	50000	13.20
Apr. 12	0330	*73500	15.66	Apr. 26	0600	55100	13.78

Minimum discharge, 638 ft³/s Sept. 30, gage height, 3.36 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2530	3160	13300	4930	4610	10800	12900	13300	7070	3140	1730	1470
2	2460	2530	14300	4560	5410	10900	11700	11700	6820	3440	1640	1520
3	2220	2770	10700	4590	6750	10000	21300	10600	6880	3640	1440	1370
4	1920	2300	10500	4280	18700	8960	55300	10100	6360	3700	1640	1400
5	1740	2740	8960	4430	20400	7850	35100	9550	5920	3340	1680	1330
6	1820	3340	8110	5080	16200	7540	24300	8910	6160	3300	1540	1260
7	1920	3910	6680	4690	13000	7080	19900	7940	5840	3470	1680	1080
8	1890	3370	6050	4200	11200	8960	17600	7590	7010	3640	1950	914
9	1790	3130	5560	3810	10100	13400	16700	6880	6270	3120	2000	1240
10	1740	2950	5190	3890	9040	13000	23000	6880	5690	2940	1440	1010
11	1860	2820	4930	4220	7410	15300	62800	6330	5070	2700	1660	868
12	2120	2950	5480	4220	6960	15000	67600	6180	4600	2500	2090	776
13	2200	3240	5210	4150	6500	13300	37800	5780	4340	2450	1850	845
14	2300	4170	4870	3810	6500	11600	24800	5630	4170	2640	1900	1050
15	2870	4590	5300	3890	6800	10100	21400	5490	4070	2400	1780	960
16	3290	3520	6750	3910	7200	9390	43600	5350	3940	2280	1660	1030
17	2740	3080	16300	3830	8610	8340	40400	8650	4020	2090	1640	1280
18	2640	3260	27600	3500	10900	8780	31300	10200	3920	2120	1540	1590
19	2270	2560	24200	3420	14900	17100	23700	15200	3700	2020	1520	1400
20	2220	2770	16100	3210	17100	38800	19400	13000	3900	1880	1470	1140
21	2510	2430	12400	2900	16000	39700	15800	11000	5430	2000	1370	1010
22	1860	2460	9950	3290	14300	27800	13500	11600	6720	1900	1350	1010
23	1860	2510	8580	4410	13700	25100	11900	18900	6540	1880	1450	914
24	1860	2530	7320	4820	14400	23500	18300	18200	5210	2020	1400	1010
25	1920	2640	6460	5510	16300	18700	48800	15700	4700	2020	1330	1170
26	2590	2350	5810	5350	16600	15000	53000	13200	3940	2040	1280	1350
27	4120	2480	5560	5210	14900	12700	35500	10400	3800	2140	1260	1240
28	4350	2480	5300	4980	12200	19300	25500	8910	3420	2380	1190	1100
29	4040	3550	6080	5350	---	21600	20100	7970	3270	2160	1300	799
30	3810	5550	5920	5000	---	16900	15600	7100	3440	2090	1100	868
31	3440	---	5480	4510	---	14800	---	6970	---	1900	1140	---
TOTAL	76900	92140	284950	133950	326690	481300	868600	305210	152220	79340	48020	34004
MEAN	2481	3071	9192	4321	11670	15530	28950	9845	5074	2559	1549	1133
MAX	4350	5550	27600	5510	20400	39700	67600	18900	7070	3700	2090	1590
MIN	1740	2300	4870	2900	4610	7080	11700	5350	3270	1880	1100	776
(*)	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	34.6
MEAN‡	2481	3072	9193	4322	11670	15530	28950	9846	5075	2560	1550	1168
CFSM‡	.37	.45	1.36	.64	1.73	2.30	4.28	1.46	.75	.38	.23	.17
IN‡	.42	.51	1.57	.74	1.80	2.65	4.78	1.68	.84	.44	.26	.19

CAL YR 1982 TOTAL 2649330 MEAN 7258 MAX 70400 MIN 1360 MEAN‡ 7680 CFSM‡ 1.14 IN‡ 15.43
WTR YR 1983 TOTAL 2883324 MEAN 7900 MAX 67600 MIN 776 MEAN‡ 7903 CFSM‡ 1.17 IN‡ 15.88

* Diversion, in cubic feet per second, by James River and Kanawha Canal.
‡ Adjusted for diversion.

02038000 FALLING CREEK NEAR CHESTERFIELD, VA

LOCATION.--Lat 37°26'37", long 77°31'21", Chesterfield County, Hydrologic Unit 02080206, on left bank at upstream side of bridge on State Highway 651, 0.8 mi downstream from Licking Creek, 2.8 mi upstream from Pocoshock Creek, and 4.7 mi northwest of Chesterfield.

DRAINAGE AREA.--32.8 mi^2.

PERIOD OF RECORD.--October 1955 to current year.

REVISED RECORDS.--WSP 1904: 1957(M), 1958-60.

GAGE.--Water-stage recorder. Datum of gage is 126.39 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--28 years, 34.1 ft^3/s, 14.12 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft^3/s Oct. 1, 1979, gage height, 15.32 ft, from floodmarks, from rating curve extended above 3,200 ft^3/s on basis of slope-conveyance study; minimum, 0.01 ft^3/s Sept. 20, Oct. 3, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 220 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1845	352	7.19	Mar. 28	1345	248	6.31
Mar. 18	1530	235	6.15	Apr. 16	0945	1030	9.67
Mar. 21	1200	*1680	10.84	Apr. 24	2145	263	6.42

Minimum discharge, 0.64 ft^3/s Sept. 21, 27-30; minimum gage height, 2.88 ft Sept. 8-9, 12, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	6.2	29	28	19	83	65	34	16	8.3	1.3	.94
2	4.9	5.9	33	23	36	154	58	31	18	7.9	1.5	.97
3	3.9	6.2	23	24	63	83	111	31	22	6.8	1.5	1.2
4	3.2	9.7	19	22	37	64	75	49	17	5.8	1.4	.98
5	2.9	40	17	23	27	58	59	39	13	4.8	5.5	1.1
6	2.9	21	20	29	28	56	60	29	11	4.6	20	1.0
7	3.1	13	18	25	41	68	68	25	12	3.9	21	1.8
8	3.0	11	15	21	52	90	69	22	51	3.0	11	.79
9	3.9	8.9	13	20	39	72	60	21	34	2.7	6.1	.77
10	6.3	7.8	12	20	35	65	100	21	26	3.3	3.6	.82
11	4.6	6.8	14	24	42	72	89	19	19	2.4	2.4	.79
12	4.6	6.5	35	22	43	61	63	17	14	2.3	2.0	.73
13	10	19	34	18	39	52	55	15	13	2.2	1.5	.80
14	28	27	24	16	47	45	50	15	10	2.1	1.3	1.4
15	19	40	24	18	78	42	114	15	9.7	2.1	1.2	1.2
16	11	30	195	20	89	41	771	19	7.9	2.1	1.1	.87
17	6.7	19	217	19	125	39	195	21	7.0	2.1	1.2	.76
18	4.5	15	64	16	153	160	95	19	6.2	2.0	1.1	.73
19	3.4	13	45	14	121	174	76	16	7.4	1.9	1.1	.73
20	3.1	11	42	13	93	86	65	26	12	1.9	.99	.71
21	2.8	10	38	13	76	725	58	25	48	1.8	.99	1.2
22	2.7	9.9	31	16	66	204	53	56	49	1.8	.94	2.3
23	2.2	9.3	27	63	87	88	52	143	28	1.7	.93	.81
24	2.2	9.1	24	54	78	69	209	50	18	1.9	.95	.73
25	25	7.5	22	36	66	60	134	33	13	1.8	.96	.73
26	46	6.9	21	28	68	54	66	23	10	1.7	.90	.69
27	24	7.9	20	25	54	73	55	19	9.0	1.6	.90	.64
28	14	9.5	19	23	52	231	47	16	8.3	1.5	.90	.64
29	11	30	26	22	---	120	42	17	9.0	1.4	.91	.64
30	8.0	31	40	24	---	76	39	17	9.0	1.4	.90	8.2
31	6.7	---	32	22	---	67	---	17	---	1.4	.94	---
TOTAL	280.1	448.1	1193	741	1754	3332	3053	900	527.5	90.2	97.01	35.67
MEAN	9.04	14.9	38.5	23.9	62.6	107	102	29.0	17.6	2.91	3.13	1.19
MAX	46	40	217	63	153	725	771	143	51	8.3	21	8.2
MIN	2.2	5.9	12	13	19	39	39	15	6.2	1.4	.90	.64
CFSM	.28	.45	1.17	.73	1.91	3.26	3.11	.88	.54	.09	.10	.04
IN.	.32	.51	1.35	.84	1.99	3.78	3.46	1.02	.60	.10	.11	.04

CAL YR 1982 TOTAL 9455.90 MEAN 25.9 MAX 332 MIN 1.3 CFSM .79 IN 10.72
WTR YR 1983 TOTAL 12451.58 MEAN 34.1 MAX 771 MIN .64 CFSM 1.04 IN 14.12

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA
(Hydrologic bench-mark station)

LOCATION.--Lat 37°24'55", long 78°38'10", Appomattox County, Hydrologic Unit 02080207, on right bank 350 ft downstream from culvert on State Highway 614, 1.0 mi upstream from Holiday Lake, and 5.2 mi southwest of Andersonville.

DRAINAGE AREA.--8.53 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1966 to current year.

REVISED RECORDS.--WDR VA-72: 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 472.97 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Recording rain gage at station.

AVERAGE DISCHARGE.--17 years, 9.12 ft³/s, 14.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s June 21, 1972, gage height, 14.64 ft, from high-water mark in gage house, from rating curve extended above 4,200 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.10 ft³/s Sept. 11, 12, 1966; minimum gage height, 0.75 ft July 28, 1966, June 29, 30, July 1, Aug. 26, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0815	153	2.72	Apr. 24	0645	219	3.12
Mar. 18	2130	*265	3.39				

Minimum discharge, 0.72 ft³/s Sept. 12, 13, gage height, 0.80 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.9	6.8	3.7	3.7	9.8	9.1	8.8	5.3	4.1	1.5	1.6
2	2.0	2.9	5.1	3.8	17	9.4	18	8.4	5.1	4.4	2.0	1.5
3	2.0	2.9	4.5	4.5	15	7.7	40	8.3	4.9	3.3	1.8	1.5
4	2.0	6.8	3.7	3.9	8.1	6.8	14	10	6.4	3.1	2.5	1.3
5	2.0	6.1	5.2	4.0	6.2	6.4	11	8.1	5.4	4.4	2.8	1.3
6	2.0	3.9	5.0	4.0	6.2	7.8	9.9	7.6	5.9	3.6	2.0	1.2
7	2.0	3.4	3.9	3.8	6.7	9.5	15	7.3	7.6	3.0	1.7	1.1
8	2.0	3.2	3.6	3.6	7.2	11	15	7.3	5.6	2.8	1.6	1.0
9	2.8	3.1	3.3	3.6	6.1	11	21	7.3	4.9	2.7	1.4	.94
10	3.3	3.0	3.2	4.0	5.9	8.7	53	6.7	4.9	2.5	1.3	.93
11	2.5	2.9	5.0	4.3	5.5	8.5	18	6.3	4.6	2.5	1.3	.86
12	2.4	3.3	4.6	3.8	8.0	7.3	13	6.3	4.2	2.5	2.2	.80
13	7.7	20	4.4	3.6	6.8	6.5	11	6.1	4.0	2.4	1.6	.82
14	5.6	6.8	7.1	3.6	7.0	6.2	9.7	6.3	3.8	2.2	1.5	1.8
15	3.0	5.1	5.7	3.6	9.4	6.1	50	6.8	3.8	2.1	1.4	1.4
16	2.6	4.3	55	3.6	12	5.7	28	9.6	3.7	2.0	1.3	1.2
17	2.4	3.8	15	3.5	17	5.7	15	8.6	3.5	1.9	1.2	1.1
18	2.4	3.7	8.5	3.2	18	65	13	6.7	3.5	1.9	1.3	.97
19	2.4	3.6	6.7	2.8	16	56	11	6.5	5.8	1.8	1.4	.90
20	2.5	3.5	6.1	3.1	14	15	10	8.6	4.4	1.9	1.1	.83
21	2.5	3.4	5.5	3.8	12	15	9.3	9.5	7.1	1.8	1.0	.90
22	2.4	3.4	4.9	5.0	10	11	8.9	18	6.5	2.7	.92	1.1
23	2.3	3.2	4.7	8.2	13	9.0	10	13	5.0	2.2	.93	.99
24	2.5	3.2	4.6	6.0	10	8.1	100	8.5	4.1	2.7	.97	.97
25	15	3.0	4.4	5.0	13	7.5	19	7.1	3.7	2.3	1.2	.96
26	11	3.0	4.4	4.5	13	6.9	14	6.4	3.4	2.2	.99	.98
27	4.7	3.4	4.3	4.3	9.4	27	12	6.0	3.3	1.9	.93	.95
28	3.6	4.5	4.2	4.2	8.2	26	10	5.7	3.2	1.7	.90	.90
29	3.2	8.8	4.3	3.9	---	13	9.5	5.9	3.4	1.6	6.2	.87
30	3.0	6.0	4.0	3.9	---	10	9.1	6.0	3.9	1.5	1.9	1.3
31	2.9	---	3.9	3.8	---	10	---	5.4	---	1.4	1.5	---
TOTAL	108.8	137.1	211.6	126.6	284.4	413.6	586.5	243.1	140.9	77.1	50.34	32.97
MEAN	3.51	4.57	6.83	4.08	10.2	13.3	19.6	7.84	4.70	2.49	1.62	1.10
MAX	15	20	55	8.2	18	65	100	18	7.6	4.4	6.2	1.8
MIN	2.0	2.9	3.2	2.8	3.7	5.7	8.9	5.4	3.2	1.4	.90	.80
CFSM	.41	.54	.80	.48	1.20	1.56	2.30	.92	.55	.29	.19	.13
IN.	.47	.60	.92	.55	1.24	1.80	2.56	1.06	.61	.34	.22	.14

CAL YR 1982 TOTAL 2726.70 MEAN 7.47 MAX 205 MIN 1.6 CFSM .88 IN 11.89
WTR YR 1983 TOTAL 2413.01 MEAN 6.61 MAX 100 MIN .80 CFSM .78 IN 10.52

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
NOV 02...	1115	2.9	36	7.2	13.5	1.5	--	12	450	10	0
FEB 08...	1055	6.9	32	7.0	2.5	3.9	11.0	9	65	10	0
MAY 24...	0900	8.8	30	7.0	16.5	4.0	9.3	53	130	9	0
AUG 17...	0920	1.2	40	7.1	18.0	1.9	9.1	53	1000	12	0

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
NOV 02...	2.3	1.0	2.7	.8	13	4.9	2.0	14	36	36	<.10
FEB 08...	2.3	1.0	2.4	.3	11	4.8	1.6	11	29	30	<.10
MAY 24...	2.0	1.0	1.9	.5	11	2.5	1.6	10	52	26	<.10
AUG 17...	2.9	1.2	2.9	.6	17	1.7	1.5	14	37	35	<.10

< Actual value is known to be less than the value shown.

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)
NOV 02...	.030	.30	.030	.010	--	--	--	--	--	--	--
FEB 08...	<.010	<.10	.020	<.010	1	27	<1	<1	<1	<3	<1
MAY 24...	<.010	1.20	.020	.010	--	--	--	--	--	--	--
AUG 17...	<.010	<.10	.040	.040	1	24	<1	<1	<1	<3	<1

< Actual value is known to be less than the value shown.

02038850 HOLIDAY CREEK NEAR ANDERSONVILLE, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)
NOV											
02...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	140	<1	<4	6	.3	<10	1	<1	<1	19	<6.0
MAY											
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
17...	190	5	<4	12	.1	<10	<1	1	<1	26	<6.0

< Actual value is known to be less than the value shown.

DATE	ZINC, DIS-SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV											
02...	--	<.8	<.8	1.2	<.9	1.2	<.9	.11	.04	4	100
FEB											
08...	<4	--	--	--	--	--	--	--	--	3	94
MAY											
24...	--	--	--	--	--	--	--	--	--	4	100
AUG											
17...	<3	--	--	--	--	--	--	--	--	1	86

< Actual value is known to be less than the value shown.

02039000 BUFFALO CREEK NEAR HAMPDEN SYDNEY, VA

LOCATION.--Lat 37°15'25", long 78°29'12", Prince Edward County, Hydrologic Unit 02080207, on left bank 100 ft upstream from bridge on State Highway 658, 0.8 mi upstream from Locket Creek, 2.0 mi northwest of Hampden Sydney, and 6.0 mi southwest of Farmville.

DRAINAGE AREA.--69.7 mi^2.

PERIOD OF RECORD.--August 1946 to current year.

REVISED RECORDS.--WSP 1303: 1948-50(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 339.19 ft National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation). Prior to Aug. 19, 1953, nonrecording gage at same site and datum.

REMARKS.--Records good except those for period of no gage-height record, Nov. 11 to Jan. 6, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--37 years, 66.8 ft^3/s, 13.01 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,160 ft^3/s June 21, 1972, gage height, 12.38 ft, from rating curve extended above 1,600 ft^3/s on basis of slope-area measurement at gage height 11.96 ft; minimum daily, 2.7 ft^3/s Oct. 7, 8, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of about 15 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	Unknown	690	a6.08	Apr. 15	2330	*2420	8.11
Mar. 19	0630	1110	6.79	Apr. 24	1230	988	6.58
Mar. 28	0830	1010	6.62	May 22	2330	1310	7.08
Apr. 10	1130	1170	6.89				

a From high-water mark.

Minimum discharge, 11 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	34	70	50	42	96	123	74	54	36	17	20
2	21	33	85	48	59	120	104	70	52	43	20	19
3	19	32	70	78	85	92	266	67	50	39	20	18
4	18	39	60	63	71	79	214	83	50	36	20	17
5	20	56	55	54	61	72	170	72	47	55	23	16
6	20	47	62	75	60	79	119	64	45	49	20	15
7	19	41	53	67	65	237	142	60	51	42	18	14
8	19	38	45	61	73	252	144	58	50	36	17	13
9	21	35	43	56	67	208	141	58	45	32	17	13
10	24	33	42	55	64	140	784	55	43	29	16	12
11	22	32	47	55	60	107	363	52	41	28	15	12
12	22	60	80	52	64	89	253	50	39	27	17	12
13	45	140	64	49	68	77	172	48	37	26	17	13
14	50	115	56	47	72	71	11[illegible]	48	36	25	16	19
15	36	75	68	47	109	67	570	50	38	23	16	19
16	28	64	520	45	136	63	1070	58	37	23	15	17
17	23	55	270	43	182	61	363	74	34	22	15	16
18	23	48	200	43	249	173	268	61	37	21	15	15
19	22	44	130	41	223	718	195	54	66	21	16	14
20	22	41	105	42	176	292	137	61	64	22	16	13
21	22	40	88	43	135	284	105	66	52	21	14	14
22	21	39	80	45	115	272	90	390	51	23	13	17
23	21	38	74	62	144	162	87	695	46	22	14	15
24	22	35	63	61	123	109	605	291	41	27	32	14
25	101	34	59	57	123	89	360	190	38	25	25	14
26	161	32	57	53	133	76	250	115	36	25	21	13
27	78	38	55	51	99	131	169	83	34	23	19	13
28	57	46	53	49	85	754	116	69	33	22	19	13
29	47	90	58	46	---	333	93	63	34	20	37	13
30	41	75	53	45	---	218	81	62	34	19	26	15
31	36	---	52	43	---	152	---	58	---	18	22	---
TOTAL	1103	1529	2817	1626	2943	5673	7673	3299	1315	880	588	448
MEAN	35.6	51.0	90.9	52.5	105	183	256	106	43.8	28.4	19.0	14.9
MAX	161	140	520	78	249	754	1070	695	66	55	37	20
MIN	18	32	42	41	42	61	81	48	33	18	13	12
CFSM	.51	.73	1.30	.75	1.51	2.63	3.67	1.52	.63	.41	.27	.21
IN.	.59	.82	1.50	.87	1.57	3.03	4.10	1.76	.70	.47	.31	.24

CAL YR 1982 TOTAL 23775 MEAN 65.1 MAX 560 MIN 13 CFSM .93 IN 12.69
WTR YR 1983 TOTAL 29894 MEAN 81.9 MAX 1070 MIN 12 CFSM 1.18 IN 15.95

02039500 APPOMATTOX RIVER AT FARMVILLE, VA

LOCATION.--Lat 37°18'25", long 78°23'20", Cumberland County, Hydrologic Unit 02080207, on left bank at downstream side of bridge on State Highway 45 at north town limits of Farmville and 1.1 mi downstream from Buffalo Creek.

DRAINAGE AREA.--303 mi².

PERIOD OF RECORD.--March 1926 to current year.

REVISED RECORDS.--WSP 972: 1927-37, 1938(M). WSP 1303: 1927(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 281.93 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 29, 1928, nonrecording gage at same site and datum.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by Prince Edward Mill 0.2 mi upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 287 ft³/s, 12.86 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft³/s June 22, 1972, gage height, 29.70 ft, from floodmarks, from rating curve extended above 12,000 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 3.8 ft³/s Sept. 25, 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,900 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 17	1130	2350	12.89	Apr. 11	0130	4350	15.55
Mar. 19	2230	4110	15.29	Apr. 16	1500	*5300	16.40
Mar. 28	2030	3440	14.53	Apr. 25	0430	4740	15.92
Apr. 4	0200	3520	14.63	May 23	1030	4130	15.32

Minimum discharge, 42 ft³/s Sept. 12, gage height, 3.33 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	115	225	170	138	385	486	312	204	131	59	76
2	78	109	242	165	197	503	417	292	197	137	66	68
3	74	106	208	178	601	397	1790	278	188	140	76	66
4	71	115	180	180	378	321	2180	326	185	119	75	64
5	71	377	163	235	257	283	663	311	187	140	89	65
6	71	219	247	253	225	288	503	264	173	160	95	63
7	71	158	224	214	247	467	508	241	187	130	79	58
8	69	135	166	190	304	620	773	234	208	112	70	54
9	73	124	141	173	271	653	632	236	177	104	65	49
10	90	115	127	168	242	504	2400	223	162	98	61	48
11	135	141	130	178	191	397	3110	213	164	93	59	46
12	97	169	185	170	255	343	929	207	150	92	65	45
13	118	449	215	155	329	295	623	201	142	90	73	50
14	239	487	171	147	277	261	471	199	137	86	69	67
15	188	307	191	146	403	245	1010	210	134	83	62	79
16	126	255	959	143	566	231	4570	266	132	80	59	69
17	103	221	1970	137	724	216	1970	421	128	77	58	62
18	90	205	769	132	1060	612	823	272	122	76	57	58
19	90	192	438	104	950	3040	627	227	162	73	61	56
20	83	184	350	144	746	2370	481	235	199	77	60	53
21	83	178	307	152	593	1160	396	263	193	75	55	52
22	82	170	268	143	509	998	346	1040	191	79	50	62
23	79	166	243	214	552	620	332	3560	180	84	47	60
24	79	159	215	245	594	437	2200	1260	153	87	56	57
25	200	148	197	212	512	359	3610	591	137	91	69	54
26	590	144	189	185	605	308	994	392	126	87	65	53
27	367	121	183	169	461	490	622	304	118	81	59	52
28	217	118	175	161	364	2700	464	256	115	73	56	52
29	165	224	185	151	---	1970	384	234	121	68	194	51
30	138	272	189	146	---	756	340	230	127	64	201	53
31	124	---	175	143	---	537	---	221	---	61	97	---
TOTAL	4141	5883	9627	5303	12551	22766	34654	13519	4799	2948	2307	1742
MEAN	134	196	311	171	448	734	1155	436	160	95.1	74.4	58.1
MAX	590	487	1970	253	1060	3040	4570	3560	208	160	201	79
MIN	69	106	127	104	138	216	332	199	115	61	47	45
CFSM	.44	.65	1.03	.56	1.48	2.42	3.81	1.44	.53	.31	.25	.19
IN.	.51	.72	1.18	.65	1.54	2.80	4.25	1.66	.59	.36	.28	.21

CAL YR 1982 TOTAL 103886 MEAN 285 MAX 5710 MIN 55 CFSM .94 IN 12.75
WTR YR 1983 TOTAL 120240 MEAN 329 MAX 4570 MIN 45 CFSM 1.09 IN 14.76

02040000 APPOMATTOX RIVER AT MATTOAX, VA

LOCATION.--Lat 37°25'17", long 77°51'33", Amelia County, Hydrologic Unit 02080207, on right bank 75 ft upstream from Southern Railway bridge at Mattoax, 0.3 mi upstream from Skinquarter Creek, and 3.7 mi upstream from Flat Creek.

DRAINAGE AREA.--726 mi².

PERIOD OF RECORD.--August 1900 to December 1905, March 1926 to current year.

REVISED RECORDS.--WSP 892: 1938. WSP 972: 1928, 1932, 1934-38. WSP 1303: 1901(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 174.51 ft National Geodetic Vertical Datum of 1929. August 1900 to December 1905, nonrecording gage at same site, different datum. March 1926 to October 1936, nonrecording gage at same site and datum.

REMARKS.--Records good. Appomattox Water Authority gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--62 years, 722 ft³/s, 13.51 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s Aug. 18, 1940, gage height, 35.3 ft, from floodmark in gage house, from rating curve extended above 20,000 ft³/s on basis of records for stations at Farmville and near Petersburg; minimum, 11 ft³/s Oct. 2, 1930, gage height, 3.52 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 22	2300	5040	20.72	Apr. 28	0500	4700	20.10
Apr. 19	0300	*8330	23.81				

Minimum discharge, 60 ft³/s Sept. 13, gage height, 5.73 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	265	793	534	366	1160	2560	934	515	259	115	170
2	177	258	743	508	453	1900	1420	850	477	260	110	122
3	160	250	716	503	1230	1930	1680	784	441	268	111	106
4	140	247	597	520	1750	1290	2630	784	424	272	115	98
5	138	314	515	573	1070	994	2960	847	410	250	124	98
6	135	464	655	974	702	853	2800	793	398	294	119	94
7	130	422	1270	1120	670	994	1410	680	388	412	127	92
8	130	314	1020	754	847	1730	1570	624	424	300	128	88
9	140	276	622	617	994	2350	1850	600	453	247	115	78
10	196	259	501	544	808	2120	2460	590	396	221	136	72
11	218	252	450	527	724	1500	3080	556	350	203	110	66
12	224	248	503	520	686	1320	3360	527	330	192	104	64
13	235	642	624	486	726	1050	3740	503	316	185	98	62
14	277	1340	667	436	823	862	3100	489	296	182	104	66
15	356	1380	563	412	884	754	1850	484	280	181	106	88
16	322	751	2130	400	1500	699	4230	508	272	171	100	102
17	229	620	3400	386	2200	647	4580	570	265	164	94	113
18	196	520	3400	364	2760	766	6890	745	259	156	88	101
19	181	450	3580	334	3080	2820	7820	582	258	146	86	89
20	176	417	3500	276	3140	3650	4860	532	380	143	85	82
21	170	396	1100	270	2560	4210	1560	554	743	144	86	79
22	165	380	844	390	1850	4860	1160	1030	1080	146	84	86
23	160	368	729	506	1690	4790	1020	3090	534	146	82	78
24	160	354	652	680	1810	2370	2540	3290	429	156	80	86
25	317	340	600	680	1760	1190	3390	3500	350	159	75	89
26	1120	322	551	561	1870	982	3770	2520	300	165	76	84
27	1710	308	530	491	1840	998	4300	898	268	160	92	81
28	928	316	513	441	1300	2860	4220	708	250	147	90	78
29	467	429	542	412	---	3320	1380	602	242	136	84	77
30	344	705	602	392	---	3590	1060	563	247	126	92	84
31	294	---	592	378	---	3900	---	544	---	118	268	---
TOTAL	9790	13607	33504	15989	40093	62459	89250	30281	11775	6109	3284	2673
MEAN	316	454	1081	516	1432	2015	2975	977	393	197	106	89.1
MAX	1710	1380	3580	1120	3140	4860	7820	3500	1080	412	268	170
MIN	130	247	450	270	366	647	1020	484	242	118	75	62
CFSM	.44	.63	1.49	.71	1.97	2.78	4.10	1.35	.54	.27	.15	.12
IN.	.50	.70	1.72	.82	2.05	3.20	4.57	1.55	.60	.31	.17	.14

CAL YR 1982 TOTAL 267153 MEAN 732 MAX 4700 MIN 114 CFSM 1.01 IN 13.69
WTR YR 1983 TOTAL 318814 MEAN 873 MAX 7820 MIN 62 CFSM 1.20 IN 16.34

02041000 DEEP CREEK NEAR MANNBORO, VA

LOCATION.--Lat 37°16'59", long 77°52'12", Amelia County, Hydrologic Unit 02080207, on left bank 300 ft upstream from bridge on State Highway 153, 0.9 mi upstream from Sweathouse Creek, 3.4 mi northwest of Mannboro, and 7.5 mi southeast of Amelia.

DRAINAGE AREA.--158 mi².

PERIOD OF RECORD.--September 1946 to current year.

REVISED RECORDS.--WSP 1203: 1948 (calendar year figures only). WSP 2104: Drainage area. WDR VA-79-1: 1973-76(P), 1978.

GAGE.--Water-stage recorder. Datum of gage is 177.20 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 2, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--37 years, 150 ft³/s, 12.89 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s Oct. 6, 1972, gage height, 24.04 ft, from high-water mark, from rating curve extended above 3,900 ft³/s; minimum, 0.03 ft³/s Oct. 4, 5, 1968; minimum gage height, 0.29 ft Aug. 9-12, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 14.8 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 17	1530	2390	8.91	Mar. 29	0400	1390	7.61
Feb. 18	2030	1200	7.29	Apr. 16	1800	*3970	10.38
Mar. 19	2330	2390	8.91	Apr. 25	0800	1580	7.90
Mar. 22	0930	1540	7.85				

Minimum discharge, 4.2 ft³/s Aug. 22, 23, Sept. 1, 3, 6, 7, 8, 11, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	62	172	116	78	321	307	157	114	51	12	4.5
2	31	56	157	111	113	562	277	146	109	52	13	4.4
3	28	55	143	119	328	724	287	134	101	51	15	4.4
4	26	57	119	130	507	382	300	159	96	52	14	4.9
5	26	85	103	143	243	253	229	178	89	51	13	4.9
6	25	115	98	226	159	219	206	145	84	52	12	4.4
7	24	95	109	297	185	310	250	118	88	50	12	4.4
8	24	77	101	196	274	460	309	107	106	42	11	4.5
9	25	68	89	146	319	562	324	102	107	37	11	4.5
10	31	61	77	122	222	448	559	98	97	34	10	4.5
11	33	57	75	118	154	355	1000	92	82	31	11	4.7
12	31	55	112	113	165	322	568	87	73	29	9.9	6.5
13	43	89	162	102	200	241	312	86	67	28	10	9.5
14	111	122	179	91	230	197	237	83	64	26	9.2	6.5
15	137	174	133	87	334	174	331	93	66	24	8.6	11
16	96	175	466	84	492	154	2470	100	74	23	7.4	12
17	58	152	1750	81	684	139	1690	108	63	21	7.1	12
18	43	112	1110	77	1040	265	666	102	57	21	6.5	11
19	36	92	460	67	1020	1190	414	90	59	19	6.3	9.9
20	33	83	250	64	813	1580	312	92	71	18	5.7	8.6
21	33	77	201	60	641	840	248	104	264	17	5.1	7.4
22	32	73	167	68	515	1320	210	150	307	17	4.4	8.9
23	33	73	135	154	497	704	193	384	243	19	4.9	12
24	34	70	119	229	492	380	589	547	124	19	6.5	10
25	89	63	109	179	434	267	1320	245	82	20	8.3	7.4
26	317	57	103	127	464	211	655	148	66	21	6.3	8.0
27	637	57	97	105	502	229	333	119	57	20	5.5	5.3
28	401	61	91	94	321	692	248	110	52	17	4.5	4.5
29	129	106	95	87	---	1160	202	102	49	15	4.5	4.4
30	89	161	108	82	---	565	175	106	49	14	4.7	5.3
31	71	---	114	79	---	326	---	117	---	13	5.1	---
TOTAL	2763	2640	7204	3754	11426	15552	15221	4409	2960	904	264.5	210.3
MEAN	89.1	88.0	232	121	408	502	507	142	98.7	29.2	8.53	7.01
MAX	637	175	1750	297	1040	1580	2470	547	307	52	15	12
MIN	24	55	75	60	78	139	175	83	49	13	4.4	4.4
CFSM	.56	.56	1.47	.77	2.58	3.18	3.21	.90	.63	.19	.05	.04
IN.	.65	.62	1.70	.88	2.69	3.66	3.58	1.04	.70	.21	.06	.05

CAL YR 1982 TOTAL 52866.0 MEAN 145 MAX 1750 MIN 24 CFSM .92 IN 12.45
WTR YR 1983 TOTAL 67307.8 MEAN 184 MAX 2470 MIN 4.4 CFSM 1.17 IN 15.85

02041650 APPOMATTOX RIVER AT MATOACA, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°13'28", long 77°28'32", Chesterfield County, Hydrologic Unit 02080207, on left bank at upstream side of bridge on State Highway 600, 0.2 mi south of Matoaca, 2.0 mi upstream from Rohoic Creek, 2.8 mi downstream from Lake Chesdin, 3.5 mi west of Petersburg, and at mile 15.9.

DRAINAGE AREA.--1,344 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 68.30 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Appomattox Water Authority at Lake Chesdin, capacity, 36,500 acre-ft, 2.8 mi upstream, from which an average of 12.4 ft^3/s is diverted for industrial and municipal use. Records do not include flow of Upper Appomattox Canal of city of Petersburg which diverts around station. National Weather Service gage-height telemeter at station.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--14 years, 1,520 ft^3/s, 15.36 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,800 ft^3/s Oct. 7, 1972, gage height, 18.39 ft; minimum, 41 ft^3/s Oct. 4, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,900 ft^3/s Mar. 21, gage height, 10.61 ft; minimum, 60 ft^3/s Aug. 17, Sept. 12, gage height, 1.39 ft.

DISCHARGE. IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	380	534	1390	1020	673	2400	5300	1460	808	419	163	149
2	350	480	1520	953	755	3200	3440	1250	808	435	160	178
3	320	448	1390	967	1760	3700	2820	1160	708	423	147	171
4	270	495	1240	961	2730	3800	3090	1260	686	427	139	139
5	264	714	1010	1030	2730	2300	3600	1350	647	447	157	136
6	252	708	997	1250	1890	1600	3940	1450	613	431	212	106
7	241	768	1240	1820	1460	2100	3800	1200	638	447	197	104
8	250	690	1650	1810	1770	3000	2870	1050	714	498	176	92
9	252	582	1330	1340	2020	3720	2950	950	714	451	176	73
10	278	518	928	1120	1940	3910	3770	900	696	391	163	69
11	306	480	826	1010	1970	3650	5270	800	609	329	197	67
12	315	448	1040	973	1300	2700	5450	736	576	313	246	62
13	399	626	1100	870	1380	2300	5060	700	522	294	129	71
14	604	1160	1140	794	1810	1700	5020	700	482	294	124	94
15	626	2180	1120	805	2360	1350	4250	725	451	275	119	73
16	670	1940	2490	769	2950	1070	7560	811	451	269	99	65
17	534	1390	6230	701	4110	1100	8740	811	443	254	65	69
18	421	1060	7000	707	5680	1570	8740	825	410	233	71	80
19	369	857	6720	621	6310	3310	8230	912	414	223	78	80
20	333	741	5790	531	6250	6120	8170	875	466	210	78	78
21	321	692	4390	515	5770	8860	8090	839	1770	207	73	129
22	298	649	2150	588	4520	9370	4230	965	2520	218	69	155
23	292	624	1470	958	3740	8100	1920	3000	1880	189	80	99
24	303	653	1210	1310	3700	7380	3300	4710	1100	215	114	90
25	510	552	1070	1400	3300	4580	5750	4700	726	205	101	78
26	1080	546	996	1200	3500	2100	6120	4300	580	220	90	76
27	2400	548	913	1010	3600	1770	5780	2600	510	249	85	80
28	2710	562	852	876	2800	3800	5580	1220	474	225	83	80
29	1520	728	892	756	---	5860	4970	942	435	205	83	85
30	842	1060	975	733	---	6090	2280	860	414	184	83	149
31	622	---	1060	717	---	5750	---	834	---	176	76	---
TOTAL	18332	23433	62129	30115	82798	118260	150090	44895	22265	9356	3833	2977
MEAN	591	781	2004	971	2957	3815	5003	1448	742	302	124	99.2
MAX	2710	2180	7000	1820	6310	9370	8740	4710	2520	498	246	178
MIN	241	448	826	515	673	1070	1920	700	410	176	65	62

CAL YR 1982 TOTAL 452320 MEAN 1239 MAX 7000 MIN 94
WTR YR 1983 TOTAL 568483 MEAN 1557 MAX 9370 MIN 62

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV										
16...	1300	1890	87	7.4	12.0	6.2	11.2	K7	59	25
JAN										
12...	1300	1040	80	7.3	7.0	16	12.4	15	13	24
MAR										
02...	1130	3200	66	7.0	8.5	20	11.5	50	340	19
JUN										
08...	1100	715	71	7.3	23.0	6.6	8.7	29	K3500	23
AUG										
02...	1300	168	85	6.0	25.0	3.7	8.0	100	1500	30
SEP										
01...	1130	165	105	7.2	25.0	4.4	7.1	460	940	38

K Result based on colony count outside optimal range.

DATE	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV										
16...	0	5.8	2.6	5.0	2.8	26	10	5.0	<.10	16
JAN										
12...	1	5.5	2.6	5.1	1.7	23	10	4.8	<.10	17
MAR										
02...	3	4.4	1.9	4.1	1.6	16	12	4.1	.10	12
JUN										
08...	0	5.4	2.2	3.4	1.8	23	6.0	3.0	.10	13
AUG										
02...	0	7.0	3.0	4.5	2.2	33	5.1	3.6	.20	16
SEP										
01...	0	9.5	3.5	5.3	2.2	41	9.9	4.0	.10	19

< Actual value is known to be less than the value shown.

02041650 APPOMATTOX RIVER AT MATOACA, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 16...	75	63	<.10	.070	.40	.030	.010	<.010	80	1
JAN 12...	64	61	.24	.080	.10	.040	.040	.010	--	--
MAR 02...	60	50	.20	.040	.30	.060	.020	.030	80	1
JUN 08...	70	49	.14	.020	1.10	.040	.020	<.010	60	1
AUG 02...	--	61	.42	.020	.50	.050	.060	.020	--	--
SEP 01...	90	83	.64	.120	.20	.060	.040	.030	100	2

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 16...	35	<1	<1	<1	<3	5	290	<1	4	42
JAN 12...	--	--	--	--	--	--	--	--	--	--
MAR 02...	25	<1	<1	1	<3	2	310	4	<4	47
JUN 08...	27	<1	<1	1	<3	2	390	<1	<4	41
AUG 02...	--	--	--	--	--	--	--	--	--	--
SEP 01...	36	<1	<1	3	<3	3	3400	3	<4	590

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 16...	<.1	<10	1	<1	<1	41	<6.0	<4	9	98
JAN 12...	--	--	--	--	--	--	--	--	11	93
MAR 02...	.1	<10	1	<1	<1	31	<6.0	<3	10	95
JUN 08...	<.1	<10	2	<1	<1	43	<6.0	<3	15	68
AUG 02...	--	--	--	--	--	--	--	--	6	84
SEP 01...	<.1	<10	1	<1	<1	72	<6.0	6	3	100

< Actual value is known to be less than the value shown.

02042500 CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA

LOCATION.--Lat 37°26'10", long 77°03'40", New Kent County, Hydrologic Unit 02080206, on left bank 100 ft downstream from bridge on State Highway 618, 1.1 mi southwest of Providence Forge, and 1.7 mi downstream from Schiminoe Creek.

DRAINAGE AREA.--248 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1942 to current year.

REVISED RECORDS.--WSP 1553: 1956. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6.07 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--41 years, 263 ft³/s, 14.40 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,710 ft³/s Aug. 15, 1955, gage height, 11.67 ft; minimum, 0.70 ft³/s July 7, 1977; minimum gage height, 1.53 ft Sept. 13, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,080 ft³/s Apr. 17, gage height, 9.34 ft; minimum, 3.0 ft³/s Aug. 16; minimum gage height, 1.79 ft Sept. 8-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	158	189	254	231	484	883	546	297	266	11	3.9
2	121	191	215	257	209	576	902	448	257	210	9.1	4.7
3	115	209	217	277	224	613	770	377	219	169	8.7	4.5
4	129	201	245	319	221	593	623	355	197	137	8.2	4.5
5	151	201	294	327	230	527	534	337	189	116	7.8	4.3
6	152	190	337	346	233	547	478	309	174	101	8.3	4.1
7	134	190	389	327	278	547	495	281	164	90	15	3.9
8	103	214	353	303	340	527	574	248	298	83	10	3.8
9	76	210	301	276	360	489	593	218	317	77	8.2	3.9
10	56	197	251	252	344	445	609	197	285	70	7.4	4.1
11	41	192	226	245	293	418	627	185	275	63	5.9	3.9
12	31	189	270	239	292	444	659	174	237	57	5.4	4.0
13	30	196	316	237	337	460	646	164	207	51	4.7	4.3
14	65	193	312	228	354	417	620	153	228	46	3.7	5.0
15	60	200	306	217	409	375	695	145	253	40	3.4	5.7
16	63	217	340	211	456	343	1570	137	237	34	3.2	5.1
17	68	208	457	209	537	312	1990	154	206	29	3.3	4.7
18	68	217	581	207	640	352	1680	158	171	25	3.8	4.9
19	66	279	691	173	829	441	1860	195	140	21	4.3	4.9
20	65	343	751	174	905	500	1680	200	160	16	4.6	4.7
21	66	340	889	163	926	610	1250	190	341	14	4.6	5.2
22	63	299	843	160	897	1060	887	170	353	15	4.5	11
23	58	254	681	202	847	1920	668	195	466	23	4.5	12
24	52	218	534	225	773	1590	660	205	468	31	4.5	7.9
25	65	188	419	239	686	1230	676	228	478	34	4.0	7.4
26	100	165	347	248	606	884	648	276	477	31	3.7	7.6
27	108	150	303	248	536	679	600	453	476	26	3.4	7.1
28	138	138	271	294	499	653	676	660	444	22	4.1	8.9
29	161	158	248	327	---	629	757	624	392	20	3.9	7.9
30	149	180	244	314	---	634	668	494	340	16	3.7	9.4
31	138	---	241	275	---	670	---	376	---	13	4.1	---
TOTAL	2825	6285	12061	7773	13492	19969	25978	8852	8746	1946	181.0	173.3
MEAN	91.1	210	389	251	482	644	866	286	292	62.8	5.84	5.78
MAX	161	343	889	346	926	1920	1990	660	478	266	15	12
MIN	30	138	189	160	209	312	478	137	140	13	3.2	3.8
CFSM	.37	.85	1.57	1.01	1.94	2.60	3.49	1.15	1.18	.25	.02	.02
IN.	.42	.94	1.81	1.17	2.02	3.00	3.90	1.33	1.31	.29	.03	.03

CAL YR 1982 TOTAL 93610.0 MEAN 256 MAX 1130 MIN 11 CFSM 1.03 IN 14.04
WTR YR 1983 TOTAL 108281.3 MEAN 297 MAX 1990 MIN 3.2 CFSM 1.20 IN 16.24

02042500 CHICKAHOMINY RIVER NEAR PROVIDENCE FORGE, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT												
08...	1030	105	120	6.5	20.0	20	6.3	26	16	7.6	1.7	15
NOV												
19...	0845	262	116	6.6	9.0	40	8.5	20	5	5.5	1.6	9.4
JAN												
05...	1300	324	130	6.9	4.0	40	--	23	11	6.3	1.7	15
MAR												
15...	1000	377	130	6.5	9.0	30	--	20	10	5.6	1.4	17
APR												
21...	0930	1290	65	6.9	9.5	75	9.8	16	5	4.5	1.1	6.2
JUN												
09...	1030	324	72	6.7	19.5	70	6.2	21	4	6.2	1.4	6.2
SEP												
08...	0900	25	112	6.9	24.5	10	2.6	35	0	9.7	2.5	6.3

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT												
08...	1.4	10	14	17	<.10	11	72	74	<.010	<.10	<.010	250
NOV												
19...	6.1	15	5.0	17	<.10	9.0	85	63	<.010	<.10	.010	560
JAN												
05...	2.3	12	8.0	22	<.10	5.7	87	69	<.010	<.10	.010	430
MAR												
15...	1.8	10	12	26	.10	1.0	85	71	.020	.10	.010	260
APR												
21...	1.6	11	11	9.0	<.10	3.3	--	44	<.010	<.10	<.010	590
JUN												
09...	1.0	17	13	7.9	.20	5.1	59	52	<.010	.16	.020	840
SEP												
08...	2.2	36	9.7	9.6	.20	6.4	69	69	.030	.10	.040	610

< Actual value is known to be less than the value shown.

02042720 CHICKAHOMINY RIVER ABOVE WALKERS DAM, AT WALKERS, VA

LOCATION.--Lat 37°24'31", long 76°56'18", New Kent County, Hydrologic Unit 02080206, on left bank 600 ft upstream from Walkers Dam at city of Newport News pumping station, 0.7 mi south of Walkers, and 8.0 mi upstream from Diascund Creek.

DRAINAGE AREA.--301 mi^2.

PERIOD OF RECORD.--August to September 1983.

WATER QUALITY DATA, AUGUST TO SEPTEMBER 1983

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
AUG											
04...	0900	93	6.9	28.5	8.1	--	--	7.9	1.8	7.2	.7
04...	1000	95	6.2	27.5	3.9	--	--	--	--	--	--
16...	1330	100	6.7	24.5	5.8	K5	77	7.6	2.0	11	1.1
31...	1030	125	6.8	27.0	3.5	K8	94	7.9	2.3	12	1.4
SEP											
28...	0845	170	6.5	20.0	8.5	K0	2000	9.0	3.1	29	2.0

K Result based on colony count outside optimal range.

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
AUG										
04...	27	6.6	11	.10	6.7	70	<.10	.010	--	.050
04...	--	--	--	--	--	--	.12	<.010	--	.060
16...	22	9.5	13	<.10	.9	85	<.10	.010	.60	.050
31...	25	10	18	.20	4.3	84	<.10	<.010	.40	.050
SEP										
28...	23	9.1	44	.20	4.3	--	<.10	.030	.60	.040

< Actual value is known to be less than the value shown.

DATE	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)
AUG										
04...	<.010	<1	<10	60	120	2	3	<.1	250	7.8
04...	<.010	--	--	--	--	--	--	--	--	--
16...	.010	<1	10	<10	100	5	21	<.1	<3	8.5
31...	<.010	<1	10	<10	120	1	110	<.1	<3	9.8
SEP										
28...	<.010	1	--	7	89	1	13	<.1	<3	8.0

< Actual value is known to be less than the value shown.

02042734 DIASCUND CREEK RESERVOIR OFF TIMBER SWAMP, NEAR WALKERS, VA

LOCATION.--Lat 37°25'48", long 76°54'19", New Kent County, Hydrologic Unit 02080206, in Diascund Creek Reservoir at mouth of Timber Swamp, 0.3 mi west of bridge on State Highway 603, and 2.1 mi east of Walkers.

PERIOD OF RECORD.--August to September 1983.

WATER QUALITY DATA, AUGUST TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
AUG										
04...	1200	3.00	80	7.9	27.5	6.6	<.10	.170	.080	<.010
04...	1210	10.0	95	7.6	23.5	.0	<.10	.780	.110	.020
16...	1030	3.00	84	7.6	25.0	8.3	<.10	.120	.080	.020
16...	1040	10.0	90	7.0	24.5	3.9	<.10	.300	.060	.010
SEP										
14...	1240	3.00	70	6.6	25.5	4.4	<.10	.200	.100	<.010
14...	1243	10.0	80	6.7	25.5	4.1	<.10	.180	.100	<.010
28...	1050	3.00	85	--	20.0	8.8	<.10	.130	.070	<.010
28...	1105	10.0	70	--	20.0	9.1	<.10	.150	.070	<.010

< Actual value is known to be less than the value shown.

02042746 DIASCUND CREEK RESERVOIR OFF PUMP STATION, NEAR WALKERS, VA

LOCATION.--Lat 37°25'51", long 76°53'38", New Kent County, Hydrologic Unit 02080206, in Diascund Creek Reservoir 0.1 mi northwest of city of Newport News pumping station, 0.4 mi east of bridge on State Highway 603, and 2.8 mi east of Walkers.

PERIOD OF RECORD.--August to September 1983.

WATER QUALITY DATA, AUGUST TO SEPTEMBER 1983

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
AUG								
04...	1240	3.00	90	8.5	27.0	5.4	--	--
04...	1300	10.0	95	8.1	26.5	2.2	--	--
16...	1110	3.00	102	7.4	25.0	8.0	K7	K14
16...	1130	10.0	105	6.9	24.5	5.9	--	--
31...	0900	3.00	82	7.4	26.5	6.5	K10	K32
31...	0910	10.0	85	6.9	26.0	2.1	--	--
SEP								
14...	1305	3.00	80	6.8	25.5	4.9	K10	55
14...	1310	10.0	77	6.8	25.0	4.5	--	--
28...	1015	3.00	80	7.0	20.0	9.0	K0	K49
28...	1030	10.0	76	7.1	20.0	9.0	--	--

< K Result based on colony count outside optimal range.

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
AUG									
04...	12	.9	3.4	.9	33	6.2	6.0	.10	5.6
04...	12	1.0	3.9	1.0	34	6.7	5.8	.10	6.0
16...	12	1.0	4.1	1.2	26	9.3	5.7	<.10	6.9
16...	12	1.0	4.1	1.1	27	9.4	5.6	<.10	7.0
31...	11	1.0	3.7	1.2	24	7.9	5.7	.10	7.9
31...	11	.9	3.9	1.2	24	8.2	5.6	.10	8.0
SEP									
14...	11	1.0	3.8	1.2	22	9.2	5.8	.10	9.3
14...	11	.9	3.8	1.2	22	9.1	5.6	.10	9.4
28...	11	.9	4.0	1.3	21	9.6	5.7	.10	8.2
28...	11	1.1	3.7	1.3	21	9.8	5.7	.10	9.0

< Actual value is known to be less than the value shown.

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC TOTAL (MG/L AS C)
AUG								
04...	<.10	.300	--	.080	<.010	12	2	8.3
04...	<.10	.580	--	.070	<.010	240	450	7.4
16...	.11	.140	.90	.080	.020	100	47	9.8
16...	<.10	.180	.80	.070	.010	170	120	8.5
31...	.13	<.010	1.00	.070	<.010	23	2	11
31...	<.10	.070	1.20	.070	<.010	28	140	12
SEP								
14...	.11	.140	2.20	.100	<.010	90	160	10
14...	<.10	.130	2.20	.100	<.010	83	170	9.6
28...	<.10	.100	1.10	.080	<.010	27	11	8.7
28...	<.10	.080	1.50	.080	<.010	25	24	9.4

< Actual value is known to be less than the value shown.

0204275410 LITTLE CREEK RESERVOIR (NORTH NORTHEAST) NEAR NORGE, VA

LOCATION.--Lat 37°22'24", long 76°49'14", James City County, Hydrologic Unit 02080206, near head of north-northeastern arm of Little Creek Reservoir, 0.8 mi north of city of Newport News pumping station, 1.0 mi south of Toano, and 2.8 mi west of Norge.

PERIOD OF RECORD.--July to September 1983.

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
JUL										
21...	1753	3.00	109	7.8	32.5	8.5	<.10	.010	.040	<.010
21...	1754	10.0	108	6.3	29.5	5.1	<.10	.030	.100	<.010
21...	1755	20.0	145	6.5	17.0	.0	.14	.410	.050	<.010
AUG										
03...	1210	3.00	110	8.4	29.5	7.9	<.10	<.010	.050	<.010
03...	1220	10.0	110	8.5	29.0	7.2	<.10	<.010	.040	<.010
03...	1230	20.0	140	8.2	16.5	.0	<.10	.470	.050	<.010
17...	1030	3.00	105	7.1	26.0	9.7	<.10	<.010	.010	<.010
17...	1040	10.0	105	6.9	26.0	8.8	<.10	.010	.020	<.010
17...	1045	20.0	158	6.6	16.0	.0	<.10	.280	.010	<.010
30...	1015	3.00	118	7.3	27.5	8.0	<.10	.050	.020	<.010
30...	1020	10.0	120	7.0	27.0	4.5	<.10	.070	.020	<.010
30...	1025	20.0	170	7.0	15.0	.0	<.10	.750	<.010	<.010
SEP										
13...	1048	3.00	130	7.0	28.0	7.6	<.10	.140	.020	<.010
13...	1054	10.0	140	6.7	28.0	4.5	<.10	.010	.020	<.010
13...	1100	20.0	135	6.7	16.0	.0	<.10	1.20	<.010	<.010
27...	1100	3.00	105	7.6	21.0	6.1	<.10	.030	.020	<.010
27...	1105	10.0	125	7.6	20.5	5.9	<.10	.040	.020	<.010
27...	1110	19.0	130	7.5	17.0	.0	<.10	.120	.020	<.010

< Actual value is known to be less than the value shown.

0204275415 LITTLE CREEK RESERVOIR INFALL NEAR NORGE, VA

LOCATION.--Lat 37°22'17", long 76°49'06", James City County, Hydrologic Unit 02080206, in north-northeastern arm of Little Creek Reservoir, 0.8 mi northeast of city of Newport News pumping station, and 2.7 mi west of Norge.

PERIOD OF RECORD.--July to September 1983.

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
JUL									
21...	1700	--	--	--	--	.11	.190	.070	<.010
AUG									
03...	1250	93	8.4	27.5	6.3	<.10	.030	.040	<.010
17...	1010	100	6.6	24.5	7.2	.12	.070	.030	<.010
30...	1100	123	6.8	26.5	6.1	<.10	.060	.030	<.010
SEP									
13...	1026	127	6.8	27.0	1.5	<.10	.490	.060	.010
27...	1045	75	7.8	20.0	7.0	<.10	.110	.080	<.010

< Actual value is known to be less than the value shown.

0204275420 LITTLE CREEK RESERVOIR (NORTH) NEAR NORGE, VA

LOCATION.--Lat 37°22'13", long 76°49'42", James City County, Hydrologic Unit 02080206, in northern arm of Little Creek Reservoir, 0.6 mi north of city of Newport News pumping station, 1.5 mi south of Toano, and 3.3 mi west of Norge.

PERIOD OF RECORD.--August to September 1983.

WATER QUALITY DATA, AUGUST TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
AUG										
03...	1120	3.00	110	7.6	29.0	7.7	<.10	<.010	.030	<.010
03...	1130	10.0	110	7.6	29.0	7.4	<.10	<.010	.020	<.010
03...	1140	20.0	143	6.8	16.5	.0	<.10	.260	.040	<.010
17...	1110	3.00	100	6.9	27.0	9.4	<.10	<.010	.010	<.010
17...	1120	10.0	105	6.9	27.0	7.4	<.10	.020	.020	<.010
17...	1130	18.0	143	6.4	24.5	.0	<.10	.200	.020	<.010
30...	1030	3.00	112	7.6	27.5	8.1	<.10	.020	.020	<.010
30...	1035	10.0	112	7.1	27.0	5.0	<.10	.010	.010	<.010
30...	1040	20.0	162	6.8	16.5	.0	<.10	.320	<.010	<.010
SEP										
13...	0947	3.00	117	7.1	28.0	7.4	<.10	.010	.010	<.010
13...	0952	10.0	123	6.9	27.5	5.5	<.10	.010	.020	<.010
13...	1002	20.0	135	6.7	16.0	.0	<.10	.460	.010	<.010
27...	1020	3.00	120	7.4	19.0	6.5	<.10	.010	.010	<.010
27...	1023	10.0	120	7.5	20.5	6.4	<.10	.010	.010	<.010
27...	1032	20.0	180	7.3	15.0	.0	<.10	.640	.010	<.010

< Actual value is known to be less than the value shown.

0204275430 LITTLE CREEK RESERVOIR (NORTH CENTRAL) NEAR NORGE, VA

LOCATION.--Lat 37°21'43", long 76°49'42", James City County, Hydrologic Unit 02080206, near city of Newport News pumping station in north-central arm of Little Creek Reservoir, 1.8 mi south of Toano, and 3.3 mi west of Norge.

PERIOD OF RECORD.--July to September 1983.

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
JUL								
21...	0944	3.00	108	6.8	31.0	--	--	--
21...	0945	10.0	105	6.2	29.5	--	--	--
21...	0946	20.0	117	6.3	17.0	--	--	--
21...	0947	30.0	129	6.6	13.5	--	--	--
21...	0948	40.0	137	6.7	13.0	--	--	--
AUG								
03...	0950	3.00	110	7.2	28.5	7.3	--	--
03...	1010	10.0	110	7.8	29.0	7.2	--	--
03...	1025	20.0	118	7.0	15.5	.0	--	--
03...	1040	30.0	145	7.0	12.0	.0	--	--
03...	1050	40.0	143	7.0	11.5	.0	--	--
17...	0900	3.00	105	7.3	26.0	8.3	K3	88
17...	0905	10.0	105	7.3	26.0	8.2	--	--
17...	0920	20.0	123	6.4	16.0	.0	--	--
17...	0930	30.0	125	6.6	12.0	.0	--	--
17...	0940	40.0	150	6.6	11.5	.0	--	--
30...	0915	3.00	107	7.5	27.0	8.2	K2	K5
30...	0920	10.0	110	7.2	27.0	7.0	--	--
30...	0930	20.0	133	6.8	16.0	.0	--	--
30...	0940	30.0	143	6.9	12.0	.0	--	--
30...	0950	40.0	155	7.0	11.5	.0	--	--
SEP								
13...	0842	3.00	100	7.2	28.0	7.4	K12	K70
13...	0845	10.0	105	7.4	28.0	7.4	--	--
13...	0858	20.0	140	6.5	15.5	.0	--	--
13...	0904	30.0	147	6.6	12.5	.0	--	--
13...	0907	40.0	130	6.7	12.0	.0	--	--
27...	0917	3.00	105	8.2	21.0	5.7	K0	380
27...	0919	10.0	115	8.1	21.0	5.9	--	--
27...	0933	20.0	115	7.9	15.0	.0	--	--
27...	0939	30.0	185	8.2	12.0	.0	--	--
27...	0940	40.0	170	8.5	12.0	.0	--	--

K Result based on colony count outside optimal range.

0204275430 LITTLE CREEK RESERVOIR (NORTH CENTRAL) NEAR NORGE, VA--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	CARBON, ORGANIC TOTAL (MG/L AS C)
JUL								
21...	<.10	<.010	--	.060	<.010	--	--	--
21...	<.10	.020	--	.040	<.010	--	--	--
21...	<.10	.150	--	.060	<.010	--	--	--
21...	<.10	.430	--	.030	<.010	--	--	--
21...	<.10	.520	--	.030	<.010	--	--	--
AUG								
03...	<.10	.020	--	.020	<.010	--	--	--
03...	<.10	<.010	--	.040	<.010	50	<1	7.3
03...	<.10	.160	--	.020	<.010	--	--	--
03...	<.10	.540	--	.040	<.010	--	--	--
03...	<.10	.570	--	.040	<.010	6400	660	8.5
17...	.10	<.010	--	<.010	<.010	--	--	--
17...	<.10	<.010	.20	<.010	<.010	38	<1	7.8
17...	<.10	.090	--	.010	<.010	--	--	--
17...	<.10	.470	--	<.010	<.010	--	--	--
17...	<.10	.490	.70	<.010	<.010	8200	710	8.1
30...	<.10	.030	.50	<.010	<.010	--	--	--
30...	<.10	.010	.40	<.010	<.010	31	<1	8.2
30...	<.10	.200	--	<.010	<.010	--	--	--
30...	<.10	.580	--	<.010	.010	--	--	--
30...	<.10	.760	.80	<.010	.010	9400	760	6.7
SEP								
13...	<.10	<.010	--	.010	<.010	--	--	--
13...	<.10	.020	.70	.020	.010	44	<1	7.8
13...	<.10	.220	--	.010	<.010	--	--	--
13...	<.10	.260	--	.010	<.010	--	--	--
13...	<.10	1.00	1.70	.030	.020	12000	810	8.4
27...	<.10	<.010	--	.020	<.010	--	--	--
27...	<.10	.010	1.50	.020	<.010	38	3	7.3
27...	<.10	.430	--	.020	<.010	--	--	--
27...	<.10	.880	--	.010	<.010	--	--	--
27...	<.10	.960	1.90	.010	<.010	12000	830	8.9

< Actual value is known to be less than the value shown.

0204275430 LITTLE CREEK RESERVOIR (NORTH CENTRAL) NEAR NORGE, VA--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JUL									
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
AUG									
03...	--	--	--	--	--	--	--	--	--
03...	10	1.5	6.1	1.7	26	8.1	11	<.10	1.8
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	11	1.6	6.8	2.2	30	19	13	.10	1.8
17...	--	--	--	--	--	--	--	--	--
17...	11	1.7	7.1	1.7	27	8.3	12	<.10	1.9
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	11	1.8	7.4	2.2	32	21	14	<.10	2.0
30...	--	--	--	--	--	--	--	--	--
30...	10	1.7	7.5	1.8	27	8.4	12	.10	2.0
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	11	1.8	7.7	2.3	33	24	14	.10	2.2
SEP									
13...	--	--	--	--	--	--	--	--	--
13...	9.8	1.7	8.9	1.5	28	8.5	14	.20	2.1
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	11	1.8	7.2	2.0	31	27	14	.10	2.4
27...	--	--	--	--	--	--	--	--	--
27...	10	2.0	8.8	1.8	28	4.2	14	.10	2.0
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	11	2.0	7.7	2.3	30	27	14	.10	2.6

< Actual value is known to be less than the value shown.

0204275440 LITTLE CREEK RESERVOIR (NORTHEAST) NEAR NORGE, VA

LOCATION.--Lat 37°21'42", long 76°48'42", James City County, Hydrologic Unit 02080206, 0.9 mi northeast of city of Newport News pumping station, 1.3 mi south of Toano, and 2.4 mi west of Norge.

PERIOD OF RECORD.--August to September 1983.

WATER QUALITY DATA, AUGUST TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
AUG												
03...	1310	3.00	113	7.5	30.0	7.8	--	--	<.10	.010	.020	<.010
03...	1320	10.0	113	7.1	29.5	5.4	--	--	<.10	<.010	.040	<.010
03...	1330	20.0	218	6.9	19.5	.0	--	--	<.10	.730	.030	<.010
17...	1330	3.00	110	6.8	27.0	9.4	K0	72	<.10	.020	<.010	<.010
17...	1340	10.0	113	6.8	26.0	8.9	--	--	.15	.010	.010	<.010
17...	1350	18.0	138	6.1	20.0	.0	--	--	.12	.010	.070	<.010
30...	1300	3.00	112	7.5	28.0	8.8	K2	K10	<.10	.030	.040	<.010
30...	1310	10.0	112	7.2	27.0	7.1	--	--	<.10	.040	<.010	<.010
30...	1320	20.0	164	7.0	15.5	.0	--	--	<.10	.420	<.010	<.010
SEP												
13...	1234	3.00	107	7.3	28.0	7.8	K4	K16	--	--	--	--
13...	1236	10.0	115	6.9	27.5	5.1	--	--	<.10	.060	.020	<.010
13...	1240	18.0	150	6.7	18.5	.0	--	--	<.10	.090	.020	<.010
27...	1240	3.00	105	7.9	21.0	6.9	K28	K26	<.10	<.010	.020	<.010
27...	1245	10.0	120	7.9	20.5	6.5	--	--	<.10	<.010	.010	<.010
27...	1250	18.0	103	7.9	20.0	5.9	--	--	<.10	.180	.010	<.010

< Actual value is known to be less than the value shown.
K Result based on colony count outside optimal range.

0204275470 LITTLE CREEK RESERVOIR (SOUTH CENTRAL) NEAR NORGE, VA

LOCATION.--Lat 37°21'17", long 76°50'27", James City County, Hydrologic Unit 02080206, 0.3 mi north of Little Creek Reservoir dam, 0.9 mi southwest of city of Newport News pumping station, 2.7 mi southwest of Toano, and 4.0 mi west of Norge.

PERIOD OF RECORD.--July to September 1983.

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUL												
21...	1318	3.00	111	7.2	31.0	7.5	--	--	--	--	--	--
21...	1319	10.0	111	6.7	30.0	7.6	10	1.5	6.9	2.1	25	10
21...	1320	20.0	112	6.3	18.0	.0	--	--	--	--	--	--
21...	1321	30.0	115	6.6	13.5	.0	--	--	--	--	--	--
21...	1322	40.0	121	6.8	13.0	.0	--	--	--	--	--	--
21...	1323	50.0	133	6.9	13.0	.0	11	1.7	7.6	2.2	28	24
AUG												
03...	1320	3.00	110	9.0	28.5	7.8	--	--	--	--	--	--
03...	1330	10.0	110	9.0	28.0	7.4	--	--	--	--	--	--
03...	1345	20.0	110	8.2	15.0	.0	--	--	--	--	--	--
03...	1400	30.0	100	8.4	12.0	.0	--	--	--	--	--	--
03...	1410	50.0	138	7.0	11.0	.0	--	--	--	--	--	--
17...	1155	3.00	112	7.0	27.5	9.1	--	--	--	--	--	--
17...	1200	10.0	108	7.0	26.0	9.1	--	--	--	--	--	--
17...	1210	20.0	118	6.2	16.5	.0	--	--	--	--	--	--
17...	1220	35.0	133	6.5	11.5	.0	--	--	--	--	--	--
17...	1230	50.0	150	6.6	11.0	.0	--	--	--	--	--	--
30...	1200	3.00	112	7.6	28.0	8.1	--	--	--	--	--	--
30...	1205	10.0	112	7.6	27.0	7.9	--	--	--	--	--	--
30...	1210	20.0	121	6.6	16.0	.0	--	--	--	--	--	--
30...	1215	35.0	140	6.8	12.0	.0	--	--	--	--	--	--
30...	1220	50.0	155	7.0	11.5	.0	--	--	--	--	--	--
SEP												
13...	1125	3.00	112	7.4	27.5	7.7	--	--	--	--	--	--
13...	1128	10.0	105	7.5	27.5	7.6	--	--	--	--	--	--
13...	1131	20.0	110	6.5	16.0	.0	--	--	--	--	--	--
13...	1134	35.0	115	6.5	12.0	.0	--	--	--	--	--	--
13...	1136	50.0	140	6.6	11.5	.0	--	--	--	--	--	--
27...	1130	3.00	130	7.6	21.0	7.1	--	--	--	--	--	--
27...	1135	10.0	120	7.7	21.0	7.1	--	--	--	--	--	--
27...	1140	20.0	140	7.2	15.0	.0	--	--	--	--	--	--
27...	1145	35.0	135	7.6	12.0	.0	--	--	--	--	--	--
27...	1150	50.0	180	7.7	11.5	.0	--	--	--	--	--	--

0204275470 LITTLE CREEK RESERVOIR (SOUTH CENTRAL) NEAR NORGE, VA--Continued

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	CARBON, ORGANIC TOTAL (MG/L AS C)
JUL											
21...	--	--	--	<.10	.040	--	.010	<.010	--	--	--
21...	12	.20	.9	<.10	.030	--	.040	<.010	87	<1	9.4
21...	--	--	--	<.10	.180	--	.030	<.010	--	--	--
21...	--	--	--	<.10	.280	--	.020	<.010	--	--	--
21...	--	--	--	.16	.400	--	.060	<.010	--	--	--
21...	13	.20	1.5	.20	.540	--	.030	.030	3900	510	6.8
AUG											
03...	--	--	--	<.10	.010	--	.010	<.010	--	--	--
03...	--	--	--	<.10	<.010	--	.020	<.010	--	--	--
03...	--	--	--	<.10	.170	--	.020	<.010	--	--	--
03...	--	--	--	<.10	.470	--	.020	<.010	--	--	--
03...	--	--	--	.11	.670	--	.030	.020	--	--	--
17...	--	--	--	<.10	.040	--	<.010	<.010	--	--	--
17...	--	--	--	<.10	.010	--	<.010	<.010	--	--	--
17...	--	--	--	<.10	.070	--	<.010	<.010	--	--	--
17...	--	--	--	<.10	.340	--	<.010	<.010	--	--	--
17...	--	--	--	.14	.560	--	.020	.020	--	--	--
30...	--	--	--	<.10	.020	.60	<.010	<.010	--	--	--
30...	--	--	--	<.10	.020	.40	<.010	<.010	--	--	--
30...	--	--	--	<.10	.090	--	<.010	<.010	--	--	--
30...	--	--	--	<.10	.500	1.00	<.010	<.010	--	--	--
30...	--	--	--	<.10	.780	--	.040	.020	--	--	--
SEP											
13...	--	--	--	<.10	.020	--	.010	<.010	--	--	--
13...	--	--	--	<.10	.010	--	.010	<.010	--	--	--
13...	--	--	--	<.10	.080	--	.020	<.010	--	--	--
13...	--	--	--	<.10	.780	--	.010	<.010	--	--	--
13...	--	--	--	<.10	.910	--	.010	.010	--	--	--
27...	--	--	--	<.10	<.010	--	.010	<.010	--	--	--
27...	--	--	--	<.10	.020	.70	.010	<.010	--	--	--
27...	--	--	--	<.10	.180	--	.020	<.010	--	--	--
27...	--	--	--	<.10	.620	--	.010	<.010	--	--	--
27...	--	--	--	<.10	.910	--	.010	<.010	--	--	--

< Actual value is known to be less than the value shown.

0204275490 LITTLE CREEK RESERVOIR (WEST) NEAR NORGE, VA

LOCATION.--Lat 37°21'21", long 76°51'02", James City County, Hydrologic Unit 02080206, in western arm of Little Creek Reservoir, 0.6 mi northwest of reservoir dam, 1.4 mi west of city of Newport News pumping station, 3.0 mi south of Toano, and 4.5 mi west of Norge.

PERIOD OF RECORD.--July to September 1983.

WATER QUALITY DATA, JULY TO SEPTEMBER 1983

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
JUL										
21...	1444	3.00	113	6.9	31.0	7.5	<.10	.010	.040	<.010
21...	1445	10.0	112	6.2	29.0	6.4	<.10	.020	.020	<.010
21...	1446	23.0	135	6.5	15.0	.0	.15	.300	.050	<.010
AUG										
03...	1425	3.00	110	7.4	29.0	7.6	<.10	.020	.020	<.010
03...	1430	10.0	110	7.3	28.0	7.4	<.10	<.010	.020	<.010
03...	1440	20.0	123	6.7	15.0	.0	<.10	.250	.030	<.010
17...	1300	3.00	107	6.7	28.0	9.1	<.10	.050	.010	<.010
17...	1310	10.0	113	6.7	26.0	7.5	.20	.050	<.010	<.010
17...	1320	20.0	125	6.3	15.5	.0	.22	.170	.010	<.010
30...	1230	3.00	112	7.5	28.0	8.0	<.10	.040	.020	<.010
30...	1240	10.0	112	7.3	27.5	7.3	<.10	.040	.010	<.010
30...	1250	20.0	143	6.8	16.0	.0	<.10	.400	.010	<.010
SEP										
13...	1201	3.00	100	7.2	27.0	7.5	<.10	.040	.010	<.010
13...	1203	10.0	95	7.2	27.0	7.3	<.10	.020	.010	<.010
13...	1207	20.0	140	6.5	15.0	.0	<.10	.330	.020	<.010
27...	1205	3.00	120	8.1	21.5	7.3	<.10	.010	.010	<.010
27...	1215	10.0	120	8.3	21.0	7.1	<.10	<.010	.010	<.010
27...	1218	20.0	110	8.1	16.0	.0	<.10	.140	.020	<.010

< Actual value is known to be less than the value shown.

02043500 CYPRESS SWAMP AT CYPRESS CHAPEL, VA

LOCATION.--Lat 36°37'24", long 76°36'07", Nansemond County, Hydrologic Unit 03010205, near center of span on downstream side of highway bridge on State Highway 32, 0.5 mi downstream from Dragon Swamp, 0.8 mi northwest of Cypress Chapel, and 6.5 mi south of Suffolk.

DRAINAGE AREA.--23.8 mi².

PERIOD OF RECORD.--October 1953 to September 1971, March 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 28.65 ft National Geodetic Vertical Datum of 1929. October 1953 to September 1971, recording gage on right bank 30 ft upstream at same datum.

REMARKS.--Records good except those for periods of no gage-height record, July 15 to Sept. 30, 1982, and Oct. 1 to Oct. 27, 1982, which are poor. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--23 years, 27.8 ft³/s, 15.86 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft³/s Aug. 11, 1967, gage height, 6.85 ft; no flow at times each year.

EXTREMES FOR PERIOD OCTOBER 1981 to September 1983.--Peak discharges above base of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Jan. 24, 1982	1730	212	4.29	Feb. 28, 1982	2030	247	4.43
Feb. 18, 1982	0200	*357	4.82	Mar. 7, 1982	2130	208	4.27
Dec. 13, 1982	0400	270	4.69	Apr. 16, 1983	2330	335	4.91
Feb. 12, 1983	0530	385	5.05	Apr. 24, 1983	2100	433	5.19
Feb. 15, 1983	0830	*462	5.26				

Water year 1982: No flow many days during year.

Water year 1983: No flow many days during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.0	1.1	119	34	195	11	8.9	19	.00	.90	.00
2	.00	1.4	3.5	176	37	109	10	5.6	3.8	.00	2.5	.00
3	.00	1.2	6.3	106	42	70	8.4	4.0	1.2	.00	2.0	.00
4	.00	1.1	7.3	109	47	54	7.3	2.8	.89	.00	.20	.00
5	.00	1.0	8.2	144	47	46	5.3	1.8	45	.08	.06	.00
6	.00	1.1	7.1	109	79	60	4.9	1.2	91	.01	.03	.00
7	.00	1.1	5.5	68	80	174	4.3	1.0	32	.00	.00	.00
8	.00	1.0	4.5	52	56	185	3.5	.89	9.2	.00	.00	.00
9	.00	.96	3.3	43	44	124	10	.73	3.3	.00	.00	.00
10	.00	.96	2.4	39	47	73	20	.55	1.3	19	.00	.00
11	.00	.98	1.9	39	48	55	15	.37	.98	54	.00	.00
12	.00	.96	1.6	39	40	47	9.8	.19	.74	39	.15	.00
13	.00	.93	1.4	34	96	40	7.6	.04	.54	8.3	2.0	.00
14	.00	.92	1.5	31	181	34	6.0	.00	.58	14	25	.00
15	.00	.91	12	32	118	30	4.7	.00	.41	26	64	.00
16	.00	.92	50	36	77	51	3.5	.00	.19	15	125	.00
17	.00	1.0	62	44	227	71	3.2	.00	.44	3.5	80	.00
18	.00	1.1	43	40	317	62	3.1	.00	11	1.0	15	.00
19	.00	1.2	32	35	196	44	2.5	.00	34	.72	3.0	.00
20	.00	1.5	27	44	132	46	2.1	.00	53	.50	.94	.00
21	.00	1.4	22	72	93	65	2.0	.00	19	.35	.72	.00
22	.00	1.2	20	123	82	57	2.0	.00	5.2	.23	.58	17
23	.00	1.2	23	127	74	42	1.8	.32	2.2	.09	.46	50
24	.00	1.1	22	193	57	31	1.4	3.6	1.1	.03	.35	42
25	.00	1.2	35	162	46	26	1.2	27	.83	.00	.15	20
26	.00	1.1	80	89	37	22	6.0	20	.52	.00	.05	11
27	.00	1.1	91	60	42	19	52	7.5	.22	.00	.00	98
28	1.1	1.1	65	48	197	14	45	2.8	.02	.00	.00	82
29	7.6	1.1	50	42	---	12	27	10	.00	.00	.00	20
30	5.6	1.1	42	35	---	10	15	13	.00	.00	.00	2.0
31	3.1	---	36	32	---	10	---	37	---	.00	.00	---
TOTAL	17.40	33.84	767.6	2322	2573	1878	295.6	149.29	337.66	181.81	323.09	342.00
MEAN	.56	1.13	24.8	74.9	91.9	60.6	9.85	4.82	11.3	5.86	10.4	11.4
MAX	7.6	2.0	91	193	317	195	52	37	91	54	125	98
MIN	.00	.91	1.1	31	34	10	1.2	.00	.00	.00	.00	.00
CFSM	.02	.05	1.04	3.15	3.86	2.55	.41	.20	.48	.25	.44	.48
IN.	.03	.05	1.20	3.63	4.02	2.94	.46	.23	.53	.28	.50	.53

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CAL YR 1981   TOTAL  3136.65   MEAN  8.59   MAX 232   MIN  .00   CFSM  .36   IN  4.90
WTR YR 1982   TOTAL  9221.29   MEAN 25.3    MAX 317   MIN  .00   CFSM 1.06   IN 14.41
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02043500 CYPRESS SWAMP AT CYPRESS CHAPEL, VA--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	13	29	101	21	53	54	14	8.3	.09	.00	.00
2	.45	12	30	75	20	118	43	12	8.0	.00	.00	.00
3	.30	11	29	76	28	75	42	9.7	4.7	.00	.00	.00
4	.20	12	26	78	29	41	50	17	5.0	.00	.00	.00
5	.10	20	24	53	22	31	32	24	8.3	.00	.00	.00
6	.02	48	29	44	22	26	27	14	3.1	.00	.00	.00
7	.00	52	80	42	65	28	33	8.7	2.1	.00	.00	.00
8	.00	33	83	35	73	33	45	5.8	83	.00	.00	.00
9	.00	26	47	29	44	37	85	3.6	73	.00	.00	.00
10	.00	22	34	28	32	44	109	2.2	19	.00	.00	.00
11	.00	19	32	31	139	34	107	1.5	8.1	.00	.00	.00
12	.00	17	138	30	338	27	60	1.1	3.4	.00	.00	.00
13	.00	25	248	25	163	22	36	.99	1.3	.00	.00	.00
14	10	40	137	21	135	19	27	.90	.92	.00	.00	.00
15	69	60	75	20	409	16	23	.79	.65	.00	.00	.00
16	64	77	78	21	223	14	170	.71	.34	.00	.00	.00
17	45	65	131	21	104	13	254	3.6	.07	.00	.00	.00
18	78	43	95	18	63	60	97	5.1	.00	.00	.00	.00
19	60	35	56	15	45	146	60	1.4	.00	.12	.00	.00
20	30	30	42	14	36	80	52	9.0	1.4	14	.00	.00
21	20	27	36	13	30	48	37	62	86	20	.00	.81
22	17	24	31	16	27	51	28	36	132	1.5	.00	14
23	15	22	27	26	29	36	23	17	42	.49	.00	17
24	14	20	25	29	38	26	189	16	15	.84	.00	6.5
25	15	18	23	25	36	22	327	10	6.7	1.1	.00	1.4
26	57	16	22	21	37	19	139	5.7	2.2	.71	.00	.82
27	56	15	21	18	32	17	57	3.7	1.0	.19	.00	.52
28	40	15	20	27	26	17	34	1.9	.66	.00	.00	.28
29	27	20	23	37	---	17	25	1.1	.37	.00	.00	.08
30	20	27	51	30	---	13	19	5.1	.40	.00	.00	.00
31	16	---	79	25	---	20	---	20	---	.00	.00	---
TOTAL	654.87	864	1801	1044	2266	1203	2284	314.59	517.01	39.04	.00	41.41
MEAN	21.1	28.8	58.1	33.7	80.9	38.8	76.1	10.1	17.2	1.26	.000	1.38
MAX	78	77	248	101	409	146	327	62	132	20	.00	17
MIN	.00	11	20	13	20	13	19	.71	.00	.00	.00	.00
CFSM	.89	1.21	2.44	1.42	3.40	1.63	3.20	.42	.72	.05	.000	.06
IN.	1.02	1.35	2.81	1.63	3.54	1.88	3.57	.49	.81	.06	.00	.06

CAL YR 1982 TOTAL 11722.32 MEAN 32.1 MAX 317 MIN .00 CFSM 1.35 IN 18.32
WTR YR 1983 TOTAL 11028.92 MEAN 30.2 MAX 409 MIN .00 CFSM 1.27 IN 17.24

02043600 LAKE DRUMMOND IN GREAT DISMAL SWAMP, VA

LOCATION.--Lat 36°35'42", long 76°26'23", Chesapeake City, Hydrologic Unit 03010205, on right bank in outlet canal, 200 ft upstream from dam and gates, 0.5 mi downstream from Lake Drummond, 3.1 mi north of North Carolina State line, and 20 mi southwest of Norfolk.

PERIOD OF RECORD.--May 1926 to current year. Prior to October 1973, published as Lake Drummond in Dismal Swamp.

REVISED RECORDS.--WSP 1032: 1934-43.

GAGE.--Nonrecording gage. Datum of gage is 12.16 ft National Geodetic Vertical Datum of 1929. Aug. 22, 1978, to Oct. 1 1981, water-stage recorder at same site and datum.

REMARKS.- Mean daily gage heights are shown in table below.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 6.68 ft Sept. 17, 1960; minimum, -0.67 ft Nov. 3, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.30 ft June 7; minimum, 3.56 ft Aug. 28.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.75	4.86	4.78	4.78	4.86	4.60	4.78	4.79	5.00	4.96	4.50	4.02
2	4.78	4.86	4.80	4.78	4.80	4.68	4.68	4.81	4.98	4.95	4.50	4.08
3	4.78	4.86	4.80	4.78	4.85	4.66	4.70	4.74	4.95	5.00	4.45	4.10
4	4.82	4.83	4.80	4.78	4.85	4.75	4.77	4.71	4.99	4.99	4.38	4.12
5	4.84	4.80	4.86	4.79	4.80	4.85	4.81	4.76	5.00	5.01	4.36	4.19
6	4.88	4.81	4.87	4.80	4.80	4.82	4.89	4.97	4.99	4.99	4.32	4.24
7	4.88	4.84	4.90	4.80	4.84	4.85	4.89	5.00	5.30	4.99	4.30	4.17
8	4.83	4.88	4.84	4.78	4.84	4.79	4.90	5.01	5.10	4.97	4.30	4.16
9	4.82	4.90	4.84	4.78	4.85	4.76	4.75	4.95	4.91	4.90	4.27	4.15
10	4.88	4.90	4.90	4.78	4.85	4.74	4.60	4.86	4.98	4.86	4.21	4.12
11	4.86	4.90	4.86	4.78	4.80	4.76	4.50	4.87	5.00	4.88	4.17	4.12
12	4.87	4.88	4.86	4.80	4.80	4.76	4.33	4.97	5.00	4.90	4.10	4.13
13	4.89	4.86	4.80	4.74	4.76	4.78	4.45	4.99	4.99	4.89	4.10	4.13
14	4.95	4.93	4.84	4.80	4.82	4.81	4.50	5.02	4.94	4.82	4.04	4.35
15	4.93	4.95	4.88	4.84	4.90	4.88	4.40	5.04	4.92	4.70	3.99	4.35
16	4.88	4.88	4.95	4.86	4.76	4.86	4.54	5.02	5.00	4.74	3.98	4.40
17	4.83	4.71	4.92	4.86	4.76	4.81	4.49	4.98	5.00	4.73	3.89	4.44
18	4.86	4.78	4.86	4.86	4.77	4.76	4.48	4.95	5.00	4.74	3.85	4.46
19	4.90	4.78	4.82	4.86	4.72	4.76	4.53	4.94	5.00	4.67	3.80	4.46
20	4.90	4.86	4.84	4.84	4.64	4.80	4.57	4.98	5.03	4.74	3.78	4.46
21	4.96	4.90	4.86	4.84	4.60	4.85	4.68	4.94	5.10	4.70	3.71	4.46
22	4.94	4.90	4.83	4.84	4.59	4.83	4.82	4.94	4.97	4.69	3.69	4.70
23	4.96	4.90	4.80	4.84	4.52	4.79	5.06	4.89	4.94	4.67	3.66	4.60
24	4.86	4.95	4.78	4.83	4.45	4.73	4.98	4.88	5.00	4.72	3.64	4.59
25	4.90	4.92	4.78	4.86	4.61	4.78	4.86	4.87	5.00	4.79	3.61	4.65
26	4.88	4.86	4.82	4.81	4.60	4.72	4.93	4.98	5.00	4.73	3.60	4.66
27	4.86	4.86	4.84	4.80	4.49	4.69	5.02	5.02	5.00	4.62	3.60	4.66
28	4.82	4.84	4.80	4.86	4.45	4.74	4.98	5.00	5.03	4.60	3.56	4.68
29	4.82	4.86	4.80	4.86	---	4.72	4.94	5.00	5.00	4.58	3.83	4.68
30	4.86	4.80	4.84	4.83	---	4.68	4.86	4.97	4.99	4.58	3.81	4.65
31	4.86	---	4.86	4.86	---	4.66	---	5.11	---	4.53	3.84	---
MEAN	4.87	4.86	4.84	4.82	4.73	4.76	4.72	4.93	5.00	4.79	3.99	4.37
MAX	4.96	4.95	4.95	4.86	4.90	4.88	5.06	5.11	5.30	5.01	4.50	4.70
MIN	4.75	4.71	4.78	4.74	4.45	4.60	4.33	4.71	4.91	4.53	3.56	4.02

CAL YR 1982 MEAN 4.79 MAX 5.28 MIN 4.36
WTR YR 1983 MEAN 4.72 MAX 5.30 MIN 3.56

02044000 NOTTOWAY RIVER NEAR BURKEVILLE, VA

LOCATION.--Lat 37°04'40", long 78°11'52", Lunenburg County, Hydrologic Unit 03010201, on right bank at downstream side of bridge on State Highway 723, 4.0 mi upstream from Modest Creek, 5.6 mi north of Victoria, and 7.5 mi south of Burkeville.

DRAINAGE AREA.--38.7 mi^2.

PERIOD OF RECORD.--September 1946 to current year.

REVISED RECORDS.--WSP 1383: 1946-47, 1949. WSP 1433: 1948. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 354.58 ft National Geodetic Vertical Datum of 1929. Prior to July 4, 1951, nonrecording gage at same site and datum. Prior to Oct. 29, 1981, on left bank at downstream side of bridge at same datum.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--37 years, 38.7 ft^3/s, 13.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft^3/s Oct. 23, 1971, gage height, 22.33 ft, from rating curve extended above 3,200 ft^3/s on basis of slope-area measurement of peak flow; no flow Aug. 29 to Oct. 14, 1954, Sept. 3-5, 12-15, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1930, 27.4 ft in August 1940, from Corps of Engineers floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1530	1580	13.57	Apr. 16	Unknown	*2600	a15.9
Mar. 19	Unknown	1700	a14.0				

a About.

Minimum daily discharge, 0.10 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	15	52	40	29	96	77	34	16	6.0	2.1	.79
2	4.3	15	58	33	150	120	58	32	16	7.4	2.5	.46
3	4.1	14	39	60	118	81	109	29	14	6.8	2.8	.41
4	4.0	15	33	52	71	62	72	58	14	5.8	2.6	.50
5	3.9	24	29	61	47	52	61	37	14	15	2.4	.51
6	3.9	19	63	95	44	71	68	30	12	9.2	2.3	.45
7	3.6	15	52	59	64	166	102	27	14	5.7	2.2	.33
8	3.0	14	32	45	100	127	104	27	18	5.0	4.0	.28
9	3.2	13	26	37	69	95	85	25	14	4.3	2.9	.23
10	4.0	13	23	36	57	75	400	23	11	4.1	1.9	.17
11	5.3	13	26	38	54	112	110	23	10	4.0	1.5	.14
12	4.5	13	74	34	48	71	72	23	9.2	3.8	1.3	.10
13	24	95	59	30	57	54	58	22	8.6	3.6	1.2	.14
14	54	52	42	28	70	45	50	22	8.0	3.4	1.3	.19
15	15	87	38	29	128	40	500	23	7.8	3.1	1.4	.28
16	8.2	57	431	28	135	36	700	27	7.6	2.5	1.2	.24
17	6.0	37	136	25	135	33	112	30	6.8	2.0	1.1	.21
18	5.3	30	71	24	138	250	78	26	6.7	1.9	1.0	.16
19	5.1	26	49	21	135	550	71	22	21	1.8	1.0	.14
20	5.0	24	43	19	126	111	61	26	14	1.7	.63	.12
21	5.2	23	43	20	108	220	52	27	10	2.4	.48	.16
22	5.2	21	33	28	96	106	47	260	39	2.5	.42	.20
23	5.0	20	29	97	121	76	49	320	17	3.4	.42	.30
24	4.9	19	33	66	111	62	483	70	12	3.9	.40	.27
25	300	16	32	49	105	54	133	35	9.4	4.0	.36	.24
26	170	15	30	41	103	47	76	26	7.6	3.5	.34	.24
27	61	15	29	39	76	80	58	22	6.7	3.2	.33	.21
28	33	18	28	39	62	320	48	18	6.2	2.6	.33	.25
29	24	79	32	31	---	110	41	17	6.0	2.4	.60	.29
30	19	60	40	31	---	73	37	20	5.8	2.1	.90	.35
31	16	---	37	30	---	70	---	18	---	2.1	1.2	---
TOTAL	814.2	877	1742	1265	2557	3465	3972	1399	362.4	129.2	43.11	8.36
MEAN	26.3	29.2	56.2	40.8	91.3	112	132	45.1	12.1	4.17	1.39	.28
MAX	300	95	431	97	150	550	700	320	39	15	4.0	.79
MIN	3.0	13	23	19	29	33	37	17	5.8	1.7	.33	.10
CFSM	.68	.76	1.45	1.05	2.36	2.89	3.41	1.17	.31	.11	.04	.007
IN.	.78	.84	1.67	1.22	2.46	3.33	3.82	1.34	.35	.12	.04	.01

CAL YR 1982 TOTAL 13234.70 MEAN 36.3 MAX 431 MIN 2.5 CFSM .94 IN 12.72
WTR YR 1983 TOTAL 16634.27 MEAN 45.6 MAX 700 MIN .10 CFSM 1.18 IN 15.99

02044500 NOTTOWAY RIVER NEAR RAWLINGS, VA

LOCATION.--Lat 36°59'00", long 77°48'00", Brunswick County, Hydrologic Unit 03010201, on right bank at downstream side of bridge on State Highway 612 at Harpers Bridge, 0.1 mi upstream from Beaver Pond Creek, and 2.6 mi northwest of Rawlings.

DRAINAGE AREA.--309 mi^2.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 184.88 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--33 years, 313 ft^3/s, 13.76 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,900 ft^3/s Oct. 6, 1972, gage height, 23.25 ft, from rating curve extended above 16,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.40 ft^3/s Oct. 14, 15, 1954; minimum gage height, 1.83 ft Oct. 15, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 20.8 ft, discharge, about 19,000 ft^3/s, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 18	0330	3300	8.51	Apr. 17	0500	*6070	12.16
Mar. 20	0630	4850	10.61	Apr. 25	2230	2580	7.45
Mar. 22	0300	5330	11.24				

Minimum discharge, 28 ft^3/s Sept. 11-12, gage height, 2.38 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	176	407	288	216	634	635	404	343	124	46	60
2	86	165	365	284	257	1230	599	385	343	135	67	57
3	81	157	343	300	784	1070	601	366	300	135	89	48
4	75	158	294	341	981	643	615	428	276	130	83	46
5	73	327	262	350	469	517	503	452	264	121	73	44
6	73	326	286	415	371	471	485	371	252	124	63	43
7	72	251	276	482	409	637	581	326	305	121	57	40
8	73	203	269	372	542	868	909	313	330	105	52	38
9	73	183	230	313	582	857	805	300	300	94	61	34
10	74	169	209	288	459	675	1170	292	256	87	57	29
11	75	170	215	284	442	622	1880	280	228	80	48	29
12	79	161	346	275	410	625	1040	272	212	76	46	28
13	88	192	449	256	440	491	659	264	196	74	53	38
14	212	325	372	239	462	425	540	264	185	71	47	54
15	282	367	309	235	802	389	538	276	173	66	44	74
16	178	436	889	234	1060	364	2970	309	166	63	43	76
17	127	351	2360	224	1190	339	5030	394	159	60	38	67
18	103	271	2630	216	1720	721	1550	339	152	58	31	60
19	96	236	681	190	1640	2760	822	284	152	54	31	54
20	95	217	505	175	1160	4250	687	409	248	53	30	50
21	96	206	444	194	901	3530	569	476	276	52	32	48
22	97	198	395	209	749	4280	505	385	486	54	31	50
23	95	192	340	333	689	1340	471	569	371	55	35	55
24	97	187	315	487	801	726	903	925	244	64	46	50
25	206	173	292	388	761	606	2190	486	189	73	49	46
26	1150	165	278	302	891	514	1580	352	159	74	44	42
27	1490	167	264	264	788	508	671	305	138	69	40	41
28	496	175	255	249	585	1310	549	280	130	63	37	38
29	294	294	253	235	---	1930	481	264	127	55	44	36
30	230	458	267	227	---	953	433	280	121	52	44	38
31	196	---	286	222	---	640	---	343	---	47	41	---
TOTAL	6557	7056	15086	8871	20561	34925	30971	11393	7081	2489	1502	1413
MEAN	212	235	487	286	734	1127	1032	368	236	80.3	48.5	47.1
MAX	1490	458	2630	487	1720	4280	5030	925	486	135	89	76
MIN	72	157	209	175	216	339	433	264	121	47	30	28
CFSM	.69	.76	1.58	.93	2.38	3.65	3.34	1.19	.76	.26	.16	.15
IN.	.79	.85	1.82	1.07	2.48	4.20	3.73	1.37	.85	.30	.18	.17

CAL YR 1982 TOTAL 117544 MEAN 322 MAX 2630 MIN 70 CFSM 1.04 IN 14.15
WTR YR 1983 TOTAL 147905 MEAN 405 MAX 5030 MIN 28 CFSM 1.31 IN 17.81

02045500 NOTTOWAY RIVER NEAR STONY CREEK, VA

LOCATION.--Lat 36°54'00", long 77°24'00", Sussex County, Hydrologic Unit 03010201, on left bank 15 ft downstream from upstream bridge on U.S. Highway 301, 1.8 mi upstream from Island Swamp, 3.3 mi south of town of Stony Creek, and 4.4 mi upstream from Stony Creek.

DRAINAGE AREA.--579 mi².

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 802: 1935(M). WSP 972: 1931(M), 1932, 1934-35, 1939. WSP 2104: Drainage area. WDR VA-74-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 58.42 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 11, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good for October and November and fair thereafter. Diurnal fluctuation at low flow caused by Baskerville Mill, 33 mi upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 564 ft³/s, 13.23 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,200 ft³/s Aug. 17, 1940, gage height, 23.66 ft, from rating curve extended above 13,000 ft³/s; minimum, 3.4 ft³/s Aug. 15, 16, 1977; minimum gage height, 0.62 ft Sept. 2, 5, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 19	0430	3700	13.45	Apr. 18	2000	6500	16.42
Mar. 23	1700	*6860	16.68				

Minimum daily discharge, 13 ft³/s Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172	270	903	669	424	1340	1200	750	455	153	55	31
2	138	243	846	652	438	2830	1140	710	469	154	54	29
3	118	229	693	687	1070	2640	1110	690	445	158	52	29
4	106	223	595	733	1560	1690	1130	740	390	177	54	30
5	97	272	511	752	1140	1110	1040	750	349	179	56	28
6	92	541	467	1380	759	1000	960	700	314	158	61	25
7	89	485	755	1110	815	1470	1120	559	299	150	62	24
8	87	380	617	916	1160	1820	1440	493	484	134	58	25
9	84	309	499	752	1150	1840	1760	464	502	122	58	22
10	84	276	411	649	980	1450	1610	420	377	110	53	17
11	83	254	401	625	1010	1210	2370	400	300	102	51	15
12	86	247	936	603	1120	1050	2500	380	254	96	49	14
13	96	288	1210	557	1010	900	1300	370	218	92	45	13
14	171	341	935	506	1120	780	1040	360	200	93	42	17
15	354	587	732	481	2590	700	1020	370	187	87	43	20
16	405	771	1340	493	2720	660	4650	394	175	81	44	21
17	264	723	3280	472	2760	650	5870	501	165	75	41	19
18	183	562	3490	445	3080	1300	6210	581	158	71	39	22
19	143	445	3170	408	3260	4000	4490	479	155	66	37	27
20	124	386	1310	358	2690	4940	1700	516	170	63	36	33
21	118	351	1050	354	1850	5200	1220	1040	677	59	38	34
22	116	327	810	387	1470	5890	1060	827	713	57	37	39
23	117	313	730	666	1310	6670	1040	977	703	60	35	31
24	115	302	680	940	1300	4360	1350	1270	457	64	32	35
25	143	290	640	864	1400	1300	2490	1140	258	67	31	37
26	735	267	590	620	1690	1100	3010	624	210	76	33	32
27	1850	257	547	535	1710	1080	1500	478	188	79	31	29
28	1580	265	503	512	1340	1750	1040	401	171	76	29	26
29	650	372	504	484	---	2480	900	351	163	67	30	24
30	419	878	525	454	---	2420	790	329	157	60	31	24
31	323	---	599	437	---	1400	---	392	---	57	32	---
TOTAL	9142	11454	30279	19501	42926	67030	58060	18456	9763	3043	1349	772
MEAN	295	382	977	629	1533	2162	1935	595	325	98.2	43.5	25.7
MAX	1850	878	3490	1380	3260	6670	6210	1270	713	179	62	39
MIN	83	223	401	354	424	650	790	329	155	57	29	13
CFSM	.51	.66	1.69	1.09	2.65	3.73	3.34	1.03	.56	.17	.08	.04
IN.	.59	.74	1.95	1.25	2.76	4.31	3.73	1.19	.63	.20	.09	.05

CAL YR 1982 TOTAL 219206 MEAN 601 MAX 3530 MIN 66 CFSM 1.04 IN 14.08
WTR YR 1983 TOTAL 271775 MEAN 745 MAX 6670 MIN 13 CFSM 1.29 IN 17.46

02046000 STONY CREEK NEAR DINWIDDIE, VA

LOCATION.--Lat 37°04'01", long 77°36'10", Dinwiddie County, Hydrologic Unit 03010201, on right bank at upstream side of upstream bridge on U.S. Highway 1, 1.2 mi southwest of Dinwiddie, 1.7 mi downstream from Chamberlains Bed Creek, and 5.7 mi downstream from confluence of White Oak and Butterwood Creeks.

DRAINAGE AREA.--112 mi².

PERIOD OF RECORD.--September 1946 to current year. Published as "at Dinwiddie" September 1946 to September 1947 and October 1949 to September 1950.

REVISED RECORDS.--WSP 1303: 1947(M). WSP 1433: 1951(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 129.94 ft National Geodetic Vertical Datum of 1929. Prior to June 12, 1957, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--37 years, 112 ft³/s, 13.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft³/s Oct. 6, 1972, gage height, 20.84 ft, from rating curve extended above 5,800 ft³/s on basis of contracted-opening measurement of peak flow; no flow for part of Oct. 13, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	2300	1280	8.46	Apr. 16	1130	1860	9.67
Mar. 22	0030	*3280	12.13				

Minimum daily discharge, 0.30 ft³/s Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	36	159	108	74	365	200	101	57	23	3.4	2.0
2	17	35	173	100	114	737	183	96	78	22	4.3	2.2
3	14	34	130	119	328	525	236	87	65	21	3.4	2.0
4	12	44	105	130	239	283	278	128	53	22	2.9	1.8
5	12	233	87	141	160	207	176	117	46	23	2.7	1.4
6	10	111	298	253	137	183	193	97	41	23	2.9	1.1
7	8.9	83	258	174	158	167	262	83	56	22	3.4	.90
8	8.1	68	129	133	267	220	461	72	98	33	3.4	.74
9	8.0	55	96	111	231	235	383	53	96	28	4.7	.64
10	8.4	48	79	101	185	211	454	55	68	19	3.6	.52
11	8.6	44	91	102	165	245	536	55	41	14	2.2	.45
12	10	41	273	95	150	200	330	44	34	11	2.0	.42
13	19	60	252	84	180	164	214	44	27	9.9	1.7	.90
14	60	69	166	76	248	137	162	46	22	15	1.4	1.8
15	62	176	141	78	549	109	259	41	23	13	1.4	1.2
16	47	193	691	81	608	99	1540	54	24	10	1.2	1.0
17	34	123	1070	70	648	92	1030	101	23	8.5	1.0	.90
18	28	90	552	60	702	371	425	85	19	7.2	1.0	.78
19	23	75	267	54	595	872	310	70	29	6.8	1.0	.64
20	21	64	211	50	451	755	244	150	66	5.6	.88	.56
21	19	58	194	53	331	1430	185	144	804	4.7	.72	.72
22	18	54	161	63	259	2320	155	98	721	3.8	.56	1.0
23	18	52	134	202	272	658	134	148	313	3.4	.38	.88
24	19	50	119	214	253	337	438	167	131	3.4	1.4	.56
25	85	45	108	149	233	255	504	107	86	3.8	1.7	.38
26	382	43	102	113	325	200	299	71	65	7.2	1.8	.36
27	257	44	94	94	292	162	196	57	50	4.3	2.0	.34
28	127	47	89	85	227	425	147	50	37	3.8	2.0	.32
29	72	197	90	78	---	418	120	41	33	4.1	2.2	.30
30	52	219	97	84	---	253	109	42	27	3.4	1.7	.36
31	42	---	103	79	---	197	---	51	---	2.9	1.4	---
TOTAL	1521.0	2491	6519	3334	8381	12832	10163	2555	3233	381.8	64.34	27.17
MEAN	49.1	83.0	210	108	299	414	339	82.4	108	12.3	2.08	.91
MAX	382	233	1070	253	702	2320	1540	167	804	33	4.7	2.2
MIN	8.0	34	79	50	74	92	109	41	19	2.9	.38	.30
CFSM	.44	.74	1.88	.96	2.67	3.70	3.03	.74	.96	.11	.02	.008
IN.	.51	.83	2.17	1.11	2.78	4.26	3.38	.85	1.07	.13	.02	.01

CAL YR 1982 TOTAL 39746.20 MEAN 109 MAX 1070 MIN 8.0 CFSM .97 IN 13.20
WTR YR 1983 TOTAL 51502.31 MEAN 141 MAX 2320 MIN .30 CFSM 1.26 IN 17.11

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA

(National stream-quality accounting network station)

LOCATION.--Lat 36°46'13", long 77°09'59", Southampton County, Hydrologic Unit 03010201, on right bank 1,000 ft upstream from bridge on State Highway 653, 1 mi downstream from Three Creek, 2.5 mi southwest of Sebrell, and 5.5 mi upstream from Assamoosick Swamp.

DRAINAGE AREA.--1,421 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1941 to current year.

REVISED RECORDS.--WSP 1333: 1942, 1944, 1948-49. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5.94 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 23, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--42 years, 1,364 ft^3/s, 13.04 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft^3/s July 19, 1975, gage height, 24.43 ft; minimum, 4.0 ft^3/s Oct. 25, 1981; minimum gage height, 2.82 ft Oct. 24-25, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 29.7 ft, from floodmarks, discharge, 48,000 ft^3/s, from rating curve extended above 25,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,400 ft^3/s Apr. 20, gage height, 18.81 ft; minimum, 38 ft^3/s Sept. 12-14; minimum gage height, 2.88 ft Sept. 13-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	616	732	1550	1650	1290	3780	4460	2860	836	371	82	56
2	456	602	1980	1840	1260	4080	4320	2180	1020	346	81	51
3	345	513	2110	1900	1470	4410	3730	1830	1170	323	91	54
4	280	457	2010	1950	2070	4860	3240	1710	1290	311	80	57
5	234	454	1750	2080	2580	5550	3010	1740	1270	325	79	50
6	202	455	1530	2240	2790	5820	2920	1860	1050	405	105	42
7	179	750	1570	2680	2590	5260	2810	1770	858	390	119	43
8	164	813	1850	3070	2490	4570	2900	1530	921	363	116	44
9	154	731	2010	3110	2730	4650	3200	1320	1450	316	100	40
10	149	651	1770	2770	2940	5350	3530	1170	1540	265	89	40
11	140	566	1440	2370	3110	5820	3860	1050	1220	233	84	39
12	137	503	1720	2110	3600	5470	4120	955	922	205	83	38
13	147	534	2600	1860	4080	4790	4300	890	726	183	83	38
14	324	715	3220	1660	4360	4100	4450	831	613	165	79	40
15	471	851	3510	1520	4730	3480	4270	787	540	155	72	40
16	616	1220	3450	1440	5180	2870	4480	792	483	149	65	56
17	752	1620	3380	1400	5590	2370	5560	881	431	140	65	46
18	631	1690	3600	1330	6190	2270	7500	927	396	129	65	39
19	476	1500	3920	1240	6600	2820	9630	1060	409	123	61	39
20	360	1260	4600	1120	6660	3540	10400	1100	396	118	59	50
21	289	1080	5460	1020	6580	4580	9760	1530	613	109	56	55
22	245	932	5490	1010	6410	6020	8210	2250	1450	101	52	68
23	219	824	4490	1180	5960	6970	6350	2440	2160	95	50	70
24	206	757	3250	1680	5160	7310	4900	2330	2470	92	59	75
25	215	700	2310	2250	4270	7750	4050	2500	2300	86	54	61
26	278	652	1820	2420	3730	8050	3910	2440	1350	89	50	51
27	729	610	1600	2220	3520	7140	4110	1850	789	90	51	52
28	1760	575	1480	1910	3560	5530	4520	1280	589	95	49	50
29	2180	632	1390	1670	---	4150	4620	997	480	96	54	47
30	1720	877	1360	1500	---	3800	3850	844	413	94	56	44
31	1010	---	1440	1370	---	4020	---	779	---	90	56	---
TOTAL	15684	24256	79660	57570	111500	151180	146970	46483	30155	6052	2245	1475
MEAN	506	809	2570	1857	3982	4877	4899	1499	1005	195	72.4	49.2
MAX	2180	1690	5490	3110	6660	8050	10400	2860	2470	405	119	75
MIN	137	454	1360	1010	1260	2270	2810	779	396	86	49	38
CFSM	.36	.57	1.81	1.31	2.80	3.43	3.45	1.06	.71	.14	.05	.04
IN.	.41	.63	2.09	1.51	2.92	3.96	3.85	1.22	.79	.16	.06	.04

CAL YR 1982 TOTAL 571740 MEAN 1566 MAX 5850 MIN 114 CFSM 1.10 IN 14.97
WTR YR 1983 TOTAL 673230 MEAN 1844 MAX 10400 MIN 38 CFSM 1.30 IN 17.62

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947, 1978 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1946 to September 1947.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV 17...	1300	1650	74	6.8	8.5	5.7	9.6	540	1700	20
MAR 01...	1300	3780	56	6.6	7.0	12	10.4	90	210	16
JUN 07...	1300	848	67	6.9	22.5	8.8	6.7	58	260	21
AUG 31...	1315	55	106	7.2	27.5	2.5	5.4	K15	120	32

K Result based on colony count outside optimal range.

DATE	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV 17...	2	5.1	1.8	4.9	2.5	18	7.0	6.7	<.10	15
MAR 01...	5	4.0	1.4	3.8	1.4	11	9.5	5.0	<.10	8.4
JUN 07...	0	5.3	1.9	4.4	1.4	21	6.0	4.4	.20	14
AUG 31...	0	7.8	3.1	7.6	2.1	34	9.1	6.6	.10	13

< Actual value is known to be less than the value shown.

02047000 NOTTOWAY RIVER NEAR SEBRELL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV										
17...	76	55	<.10	.020	.30	.050	.030	.020	60	1
MAR										
01...	50	41	.19	.030	.20	.030	<.010	.010	90	1
JUN										
07...	74	52	.27	.030	.20	.080	.050	.030	80	1
AUG										
31...	95	71	.21	.070	.20	.050	.020	.030	40	2

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV										
17...	43	<1	<1	<1	<3	6	810	1	4	39
MAR										
01...	34	<1	1	<1	<3	2	310	5	<4	15
JUN										
07...	39	<1	<1	1	<3	1	980	1	<4	48
AUG										
31...	46	<1	<1	<1	<3	<1	240	2	<4	170

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV										
17...	<.1	<10	1	<1	<1	34	<6.0	<4	15	98
MAR										
01...	.2	<10	1	<1	<1	30	<6.0	<3	9	92
JUN										
07...	<.1	<10	2	<1	<1	46	<6.0	<3	14	99
AUG										
31...	<.1	<10	2	<1	<1	80	<6.0	5	5	92

< Actual value is known to be less than the value shown.

02047100 ASSAMOOSICK SWAMP NEAR SEBRELL, VA

LOCATION.--Lat 36°46'22", long 77°05'57", Southampton County, Hydrologic Unit 03010201, near center of span on upstream side of bridge on State Highway 35, 0.7 mi upstream from Indian Branch, 1.7 mi southeast of Sebrell, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--86.4 mi^2.

PERIOD OF RECORD.--March 1982 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft, from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft^3/s Apr. 18, 1983, gage height, 6.57 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft^3/s Apr. 18, gage height, 6.57 ft; no flow July 9 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	37	76	131	96	177	159	120	22	2.0	.00	.00
2	40	35	96	135	95	268	143	98	29	1.1	.00	.00
3	30	27	107	148	116	360	125	82	30	.62	.00	.00
4	19	27	114	159	110	420	114	95	27	.41	.00	.00
5	12	32	118	157	90	345	102	100	23	.41	.00	.00
6	7.9	38	122	166	95	262	101	90	20	.23	.00	.00
7	4.9	32	136	168	100	221	114	80	25	.11	.00	.00
8	3.4	27	186	168	130	245	139	71	59	.03	.00	.00
9	2.7	25	209	166	140	280	186	59	63	.00	.00	.00
10	2.7	25	190	157	155	345	253	51	76	.00	.00	.00
11	2.0	26	155	148	180	390	272	44	90	.00	.00	.00
12	2.1	24	205	140	210	310	237	38	63	.00	.00	.00
13	8.2	41	280	130	260	239	193	30	40	.00	.00	.00
14	56	52	445	120	350	195	157	26	23	.00	.00	.00
15	44	57	510	105	440	166	139	21	12	.00	.00	.00
16	42	86	399	90	560	145	398	25	7.2	.00	.00	.00
17	66	110	354	84	600	128	898	61	3.9	.00	.00	.00
18	71	114	302	80	500	177	1090	57	2.5	.00	.00	.00
19	56	114	292	79	430	265	729	46	3.0	.00	.00	.00
20	43	95	288	78	370	372	490	66	3.0	.00	.00	.00
21	32	80	260	75	300	396	369	120	48	.00	.00	.00
22	25	66	215	78	270	328	298	119	90	.00	.00	.00
23	20	56	177	80	240	251	247	116	102	.00	.00	.00
24	18	50	154	98	180	197	275	106	75	.00	.00	.00
25	30	42	135	120	168	168	298	80	52	.00	.00	.00
26	44	41	122	135	161	148	295	59	34	.00	.00	.00
27	44	37	113	138	148	131	285	46	19	.00	.00	.00
28	38	35	104	136	138	141	245	34	9.6	.00	.00	.00
29	36	48	100	128	---	143	195	24	6.2	.00	.00	.00
30	38	65	101	118	---	145	152	20	3.4	.00	.00	.00
31	38	---	110	107	---	159	---	21	---	.00	.00	---
TOTAL	916.9	1544	6175	3822	6632	7517	8698	2005	1060.8	4.91	.00	.00
MEAN	29.6	51.5	199	123	237	242	290	64.7	35.4	.16	.000	.000
MAX	71	114	510	168	600	420	1090	120	102	2.0	.00	.00
MIN	2.0	24	76	75	90	128	101	20	2.5	.00	.00	.00
CFSM	.34	.60	2.30	1.42	2.74	2.80	3.36	.75	.41	.002	.000	.000
IN.	.39	.66	2.66	1.65	2.86	3.24	3.74	.86	.46	.00	.00	.00

WTR YR 1983 TOTAL 38375.61 MEAN 105 MAX 1090 MIN .00 CFSM 1.22 IN 16.52

02047500 BLACKWATER RIVER NEAR DENDRON, VA

LOCATION.--Lat 37°01'30", long 76°52'30", Surry County, Hydrologic Unit 03010202, on left bank 10 ft upstream from Walls Bridge on State Highway 617, 1.2 mi downstream from Cypress Swamp, and 3.5 mi southeast of Dendron.

DRAINAGE AREA.--294 mi^2.

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 30.99 ft National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 13, 1980, at site 25 ft upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--42 years, 312 ft^3/s, 14.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,070 ft^3/s June 5, 1963, gage height, 9.1 ft, from high-water mark in well; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 13.1 ft, from Corps of Engineers floodmarks, discharge, 10,000 ft^3/s, from rating curve extended above 4,800 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,880 ft^3/s Apr. 19, gage height, 6.90 ft; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	68	230	376	333	571	647	473	163	24	.00	.00
2	41	67	287	375	321	710	648	404	152	15	.00	.00
3	36	65	330	382	319	838	646	348	141	9.0	.00	.00
4	30	67	354	387	316	895	595	336	144	6.4	.00	.00
5	25	101	378	409	315	866	524	314	145	6.7	.00	.00
6	21	115	419	424	320	902	473	297	132	4.9	.00	.00
7	18	118	485	434	366	971	455	265	122	1.9	4.2	.00
8	15	122	494	432	424	975	480	238	240	.09	5.7	.00
9	14	114	442	444	477	1030	545	219	442	.01	2.2	.00
10	13	103	369	496	501	1160	679	209	389	.00	.12	.00
11	10	94	316	531	580	1110	662	198	281	.00	.00	.00
12	8.9	92	428	538	802	997	558	179	197	.00	.00	.00
13	28	126	647	514	1040	921	579	158	173	.00	.00	.00
14	88	154	779	484	1150	818	603	140	165	.00	.00	.00
15	82	209	696	451	1320	697	619	124	142	.00	.00	.00
16	81	259	649	410	1600	568	978	122	107	.00	.00	.00
17	73	286	644	375	1680	497	2210	143	73	.00	.00	.00
18	56	290	700	347	1560	531	2510	115	49	.00	.00	.00
19	45	263	781	315	1420	657	2820	106	38	.43	.00	.00
20	39	237	776	296	1310	783	2660	137	112	38	.00	.00
21	35	225	765	284	1270	800	2060	178	270	32	.00	.00
22	29	215	773	288	1200	827	1460	249	254	17	.00	.00
23	24	203	715	308	1050	906	1030	269	231	5.1	.00	.00
24	23	189	622	330	893	911	888	260	181	.97	.00	.00
25	42	172	533	349	769	827	830	255	138	.08	.00	.00
26	66	163	464	358	665	714	830	257	109	.00	.00	.00
27	71	154	394	367	583	620	762	259	91	.00	.00	.00
28	74	150	341	376	531	584	668	286	67	.00	.00	.00
29	79	166	321	383	---	579	598	277	50	.00	.00	.00
30	76	186	328	375	---	621	543	242	39	.00	.00	.00
31	71	---	359	355	---	637	---	201	---	.00	.00	---
TOTAL	1359.9	4773	15819	12193	23115	24523	29560	7258	4837	161.58	12.22	.00
MEAN	43.9	159	510	393	826	791	985	234	161	5.21	.39	.000
MAX	88	290	781	538	1680	1160	2820	473	442	38	5.7	.00
MIN	8.9	65	230	284	315	497	455	106	38	.00	.00	.00
CFSM	.15	.54	1.74	1.34	2.81	2.69	3.35	.80	.55	.02	.001	.000
IN.	.17	.60	2.00	1.54	2.92	3.10	3.74	.92	.61	.02	.00	.00

CAL YR 1982 TOTAL 109774.20 MEAN 301 MAX 2600 MIN 1.2 CFSM 1.02 IN 13.89
WTR YR 1983 TOTAL 123611.70 MEAN 339 MAX 2820 MIN .00 CFSM 1.15 IN 15.64

02048000 BLACKWATER RIVER AT ZUNI, VA

LOCATION.--Lat 36°52'05", long 76°50'07", Isle of Wight County, Hydrologic Unit 03010202, on left bank at downstream side of bridge on U.S. Highway 460 at Zuni, 1.6 mi downstream from Pope Swamp, and 4.2 mi upstream from Antioch Swamp.

DRAINAGE AREA.--456 mi².

PERIOD OF RECORD.--October 1942 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 8.56 ft National Geodetic Vertical Datum of 1929. Prior to July 18, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--41 years, 496 ft³/s, 14.77 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s Mar. 21, 1975; maximum gage height, 17.51 ft June 5, 1963; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 23.2 ft, discharge, 16,000 ft³/s, from rating curve extended above 5,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,020 ft³/s Apr. 20, gage height, 12.48 ft; no flow Aug. 27 to Sept. 2, Sept. 7-13, 18-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	100	398	639	538	1100	1050	1060	342	67	1.0	.00
2	85	94	441	689	517	1290	1050	930	327	58	.33	.00
3	66	87	480	746	526	1500	1070	810	285	38	.53	.02
4	51	81	531	764	518	1660	1080	758	237	21	.61	.02
5	41	93	572	741	496	1680	1050	713	211	9.5	.68	.01
6	35	107	609	724	492	1590	1000	646	198	1.8	.90	.01
7	28	110	664	720	572	1500	955	582	188	.84	1.5	.00
8	23	116	734	712	676	1530	955	510	411	.61	3.0	.00
9	18	132	818	697	755	1620	1030	435	855	.59	4.0	.00
10	15	138	850	686	809	1680	1130	370	815	2.9	6.0	.00
11	11	139	822	701	1020	1750	1260	312	717	4.2	2.0	.00
12	9.1	130	1030	749	1760	1800	1370	273	626	1.8	.64	.00
13	10	156	1380	793	2180	1710	1310	248	468	2.4	.46	.00
14	84	223	1570	797	2520	1580	1150	224	320	6.8	.26	.02
15	136	285	1740	772	2800	1430	1070	199	227	9.5	.24	.01
16	138	376	1760	741	3050	1280	1730	177	182	7.0	.21	.01
17	138	443	1740	691	3160	1120	2450	188	149	4.6	.20	.01
18	120	492	1620	623	3080	1060	3130	194	117	5.0	.17	.00
19	102	516	1500	548	2850	1160	3700	203	88	10	.13	.00
20	86	500	1470	469	2560	1390	3960	242	78	41	.11	.00
21	69	451	1460	430	2290	1630	3970	402	315	50	.05	.01
22	56	397	1410	421	2080	1610	3620	411	397	32	.01	.07
23	45	353	1340	451	1960	1490	3030	414	549	16	.01	.03
24	37	324	1290	487	1850	1420	2570	447	570	10	.02	.02
25	50	302	1190	509	1680	1420	2420	432	417	6.3	.01	.02
26	97	279	1040	523	1480	1380	2230	385	275	3.4	.01	.02
27	118	261	897	527	1290	1280	1990	357	188	3.8	.00	.61
28	113	249	767	536	1130	1180	1700	340	126	8.0	.00	.35
29	110	282	661	548	---	1110	1420	317	93	2.4	.00	.10
30	107	352	585	549	---	1060	1200	317	76	.94	.00	.04
31	104	---	580	551	---	1040	---	335	---	2.6	.00	---
TOTAL	2193.1	7568	31949	19534	44639	44050	55650	13231	9847	427.98	23.08	1.38
MEAN	70.7	252	1031	630	1594	1421	1855	427	328	13.8	.74	.046
MAX	138	516	1760	797	3160	1800	3970	1060	855	67	6.0	.61
MIN	9.1	81	398	421	492	1040	955	177	76	.59	.00	.00
CFSM	.16	.55	2.26	1.38	3.50	3.12	4.07	.94	.72	.03	.002	.000
IN.	.18	.62	2.61	1.59	3.64	3.59	4.54	1.08	.80	.03	.00	.00

CAL YR 1982 TOTAL 197169.50 MEAN 540 MAX 2960 MIN 2.0 CFSM 1.18 IN 16.08
WTR YR 1983 TOTAL 229113.54 MEAN 628 MAX 3970 MIN .00 CFSM 1.38 IN 18.69

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA
(National stream-quality accounting network station)

LOCATION.--Lat 36°45'45", long 76°53'55", Southampton County, Hydrologic Unit 03010202, on right bank 0.4 mi south of Burdette, 0.5 mi upstream from Black Creek, 3.3 mi downstream from Corrowaugh Swamp, and 6.0 mi north of Franklin.

DRAINAGE AREA.--617 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1944 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.56 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Low flow reversed by tide some years. Diversion above station by city of Norfolk for municipal supply most years.

AVERAGE DISCHARGE.--39 years, 643 ft^3/s, 14.15 in/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft^3/s Sept. 14, 1960, gage height, 17.14 ft, from floodmarks; minimum daily, 0.07 ft^3/s Oct. 16, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of about 22 ft, discharge, 21,000 ft^3/s, from rating curve extended above 9,400 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,620 ft^3/s Apr. 21, gage height, 11.46 ft; minimum daily, 0.25 ft^3/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	161	530	812	653	1300	1070	1330	335	111	5.4	4.4
2	64	145	595	859	642	1480	1060	1110	350	95	5.2	3.9
3	52	134	634	918	665	1670	1070	937	347	84	4.1	4.2
4	41	128	653	977	682	1810	1080	854	318	72	4.2	4.1
5	32	164	670	974	671	1870	1060	817	279	97	3.8	5.6
6	25	204	688	945	658	1810	1040	755	248	88	3.6	5.4
7	20	220	721	913	736	1710	1040	694	229	46	3.6	6.5
8	16	210	764	882	866	1630	1100	630	250	28	2.9	5.9
9	14	203	801	846	942	1620	1210	560	447	19	3.0	4.2
10	14	205	859	821	981	1680	1360	487	678	15	3.2	5.0
11	7.8	205	905	808	1170	1730	1520	421	721	11	4.2	6.2
12	14	204	1140	803	1870	1750	1580	364	661	9.8	6.9	7.1
13	27	232	1610	807	2390	1740	1560	321	583	8.5	5.5	9.2
14	81	331	1850	813	2660	1660	1460	292	480	7.9	2.9	10
15	163	445	1950	815	2920	1560	1290	266	358	7.1	1.7	5.0
16	199	557	1990	803	3100	1420	1950	247	265	6.9	1.5	3.5
17	189	633	2050	775	3180	1270	2780	256	209	7.1	2.6	4.4
18	176	670	2000	736	3130	1210	3050	251	169	6.5	3.5	7.4
19	157	689	1860	686	2950	1300	3350	256	131	11	3.8	5.9
20	135	693	1720	617	2720	1420	3550	323	109	16	3.6	7.4
21	114	674	1620	572	2470	1590	3610	575	831	25	3.8	10
22	92	629	1530	546	2230	1720	3530	650	1290	33	3.8	14
23	76	573	1450	572	2060	1680	3230	624	1030	30	5.4	6.1
24	63	514	1370	616	1950	1570	2940	590	808	23	5.0	4.4
25	62	460	1290	642	1840	1470	2850	556	652	17	3.0	2.9
26	99	418	1210	651	1700	1400	2700	506	505	13	1.7	2.1
27	186	386	1090	648	1540	1340	2460	451	359	9.5	2.3	1.2
28	211	363	956	652	1370	1290	2170	402	258	8.9	5.2	.71
29	203	379	841	665	---	1210	1860	367	205	8.3	5.0	.44
30	189	452	763	669	---	1140	1590	342	150	7.4	3.8	.25
31	175	---	749	664	---	1090	---	333	---	5.9	3.5	---
TOTAL	2968.8	11281	36859	23507	48746	47140	60120	16567	13255	927.8	117.7	157.40
MEAN	95.8	376	1189	758	1741	1521	2004	534	442	29.9	3.80	5.25
MAX	211	693	2050	977	3180	1870	3610	1330	1290	111	6.9	14
MIN	7.8	128	530	546	642	1090	1040	247	109	5.9	1.5	.25
(*)	10.1	0	0	0	0	0	0	0	0	1.5	0	0
MEAN‡	106	376	1189	758	1741	1521	2004	534	442	31.4	3.80	5.25
CFSM‡	.17	.61	1.93	1.23	2.82	2.47	3.25	.87	.72	.05	.01	.01
IN‡	.20	.68	2.22	1.42	2.94	2.85	3.63	1.00	.80	.06	.01	.01

CAL YR 1982 TOTAL 251053.50 MEAN 688 MAX 2350 MIN 1.8 MEAN‡ 698 CFSM‡ 1.13 IN‡ 15.35
WTR YR 1983 TOTAL 261646.70 MEAN 717 MAX 3610 MIN .25 MEAN‡ 718 CFSM‡ 1.16 IN‡ 15.82

* Diversion, in cubic feet per second, by City of Norfolk.
‡ Adjusted for diversion.

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples taken at bridge 2.0 mi upstream from discharge station.

PERIOD OF RECORD.--Water years 1947, 1952, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
NOV 17...	1015	508	112	6.3	8.0	3.5	6.9	1100	K2300	34
MAR 01...	1015	1290	82	6.5	7.0	55	10.5	70	140	27
JUN 07...	1000	230	92	6.7	21.0	8.1	5.0	420	150	34
AUG 31...	1000	4.0	142	7.1	26.0	2.5	4.7	23	300	58

K Result based on colony count outside optimal range.

DATE	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 17...	20	10	2.2	4.6	3.1	14	13	16	<.10	9.7
MAR 01...	17	8.4	1.5	3.8	1.6	10	13	9.2	<.10	3.5
JUN 07...	11	11	1.6	3.4	1.8	23	13	8.7	.10	6.8
AUG 31...	12	19	2.6	4.8	2.6	46	10	9.4	.20	4.9

< Actual value is known to be less than the value shown.

02049500 BLACKWATER RIVER NEAR FRANKLIN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 17...	101	68	.12	.010	.50	.040	.020	.020	90	1
MAR 01...	68	48	.60	.030	.20	.030	<.010	<.010	100	1
JUN 07...	80	62	.29	.050	.60	.070	.060	.030	90	1
AUG 31...	124	81	<.10	.030	1.00	.050	.010	.010	30	2

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 17...	63	<1	1	<1	4	2	920	1	5	66
MAR 01...	45	<1	1	<1	<3	3	330	5	<4	22
JUN 07...	57	<1	<1	1	<3	1	1500	1	<4	110
AUG 31...	73	<1	<1	3	<3	<1	47	2	<4	41

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 17...	.1	<10	1	<1	<1	51	<6.0	8	9	94
MAR 01...	.5	<10	1	<1	<1	44	<6.0	<3	6	88
JUN 07...	<.1	<10	2	<1	1	60	<6.0	<3	10	92
AUG 31...	.2	<10	1	<1	<1	110	<6.0	6	6	89

< Actual value is known to be less than the value shown.

02051000 NORTH MEHERRIN RIVER NEAR LUNENBURG, VA

LOCATION.--Lat 36°59'53", long 78°21'03", Lunenburg County, Hydrologic Unit 03010204, on right bank at upstream side of bridge on State Highway 40, 0.5 mi downstream from Tusekiah Creek, 4.6 mi upstream from Juniper Creek, and 5.2 mi northwest of Lunenburg.

DRAINAGE AREA.--55.6 mi^2.

PERIOD OF RECORD.--August 1946 to September 1980, October 1981 to current year.

REVISED RECORDS.--WSP 1303: 1947(M), 1949(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 333.7 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to July 5, 1951, nonrecording gage at same site and datum. July 5, 1951, to July 11, 1980, water-stage recorder at site 20 ft downstream at same datum.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--36 years, 53.5 ft^3/s, 13.07 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,400 ft^3/s Oct. 23, 1971, gage height, 28.30 ft, from rating curve extended above 1,700 ft^3/s on basis of slope-area measurement of peak flow; no flow Sept. 5-21, Oct. 8-14, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 48 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1300	2680	15.35	Apr. 16	Unknown	*3700	a18.4
Mar. 19	Unknown	2500	a14.6				

a About.

Minimum daily discharge, 0.82 ft^3/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	20	75	50	26	185	103	50	22	14	5.1	2.0
2	9.3	20	70	42	300	192	81	46	23	19	7.1	1.5
3	8.7	20	46	99	200	98	250	43	21	15	5.3	1.4
4	8.7	20	42	67	80	74	109	81	22	13	4.3	1.4
5	8.7	38	36	97	54	62	80	49	22	17	3.5	1.3
6	8.7	24	110	111	53	143	88	40	20	15	3.2	1.2
7	8.2	20	65	69	93	222	167	35	28	14	2.9	1.2
8	8.2	19	42	52	131	172	141	33	26	12	2.6	1.1
9	8.5	19	34	45	85	136	127	32	21	11	2.4	1.0
10	9.0	18	30	42	67	125	600	30	18	10	2.3	.90
11	9.6	18	36	44	63	193	165	29	17	9.6	2.2	.82
12	9.0	18	119	39	55	100	100	28	17	9.3	2.6	1.4
13	41	141	76	32	61	75	78	26	16	9.0	2.3	2.6
14	57	51	53	30	106	63	69	26	15	8.2	2.0	4.1
15	18	117	53	31	227	55	500	32	16	7.4	1.8	2.7
16	13	60	855	30	235	49	800	35	15	6.8	1.8	2.2
17	11	37	199	28	270	46	150	39	14	6.0	1.6	2.1
18	10	30	97	26	256	500	106	28	16	5.3	1.4	2.0
19	10	26	72	21	221	800	96	25	83	4.8	1.7	1.9
20	10	26	67	19	165	137	77	39	24	4.3	1.3	1.8
21	11	24	68	21	125	268	65	39	36	5.1	1.1	1.7
22	12	22	51	28	105	120	60	366	67	6.0	1.1	2.4
23	14	21	46	110	188	84	62	407	26	7.4	2.6	2.6
24	23	20	42	60	137	70	700	78	20	8.5	5.3	2.2
25	600	18	39	44	158	62	180	49	17	7.1	4.0	2.2
26	308	18	38	35	154	54	104	37	15	6.0	3.0	2.2
27	71	18	36	32	95	200	83	31	14	4.9	2.5	2.2
28	42	20	34	31	77	450	70	27	13	4.5	2.2	2.3
29	30	110	41	28	---	147	60	26	17	4.0	1.9	2.2
30	25	63	48	28	---	94	53	29	16	3.8	6.1	2.7
31	22	---	47	28	---	101	---	26	---	3.6	3.8	---
TOTAL	1434.5	1076	2667	1419	3787	5077	5324	1861	697	271.6	91.0	57.32
MEAN	46.3	35.9	86.0	45.8	135	164	177	60.0	23.2	8.76	2.94	1.91
MAX	600	141	855	111	300	800	800	407	83	19	7.1	4.1
MIN	8.2	18	30	19	26	46	53	25	13	3.6	1.1	.82
CFSM	.83	.65	1.55	.82	2.43	2.95	3.18	1.08	.42	.16	.05	.03
IN.	.96	.72	1.78	.95	2.53	3.40	3.56	1.25	.47	.18	.06	.04

CAL YR 1982 TOTAL 20957.70 MEAN 57.4 MAX 855 MIN 6.1 CFSM 1.03 IN 14.02
WTR YR 1983 TOTAL 23762.42 MEAN 65.1 MAX 855 MIN .82 CFSM 1.17 IN 15.90

02051500 MEHERRIN RIVER NEAR LAWRENCEVILLE, VA

LOCATION.--Lat 36°43'00", long 77°49'55", Brunswick County, Hydrologic Unit 03010204, on right bank 50 ft upstream from Gholson Bridge on State Highway 715, 0.6 mi upstream from Allen Creek, and 3.0 mi southeast of Lawrenceville.

DRAINAGE AREA.--552 mi^2.

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1932(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 136.56 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 17, 1931, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--55 years, 498 ft^3/s, 12.25 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,000 ft^3/s Aug. 17, 1940, gage height, 42.0 ft, from floodmark, from rating curve extended above 13,000 ft^3/s on basis of velocity-area studies and records for Nottoway River near Stony Creek; minimum, 4.2 ft^3/s Oct. 7, 8, 1954; minimum gage height, 0.72 ft Sept. 23, 24, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 18	0330	5540	17.54	Apr. 17	1900	*9370	23.42
Mar. 20	1600	7150	20.42	Apr. 25	1630	4920	16.32
Mar. 22	2130	6240	18.85				

Minimum discharge, 17 ft^3/s Sept. 12-13, gage height, 1.33 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	204	641	485	292	919	958	582	526	178	66	50
2	120	192	570	478	343	2190	909	551	478	175	75	49
3	103	186	556	508	2130	1420	866	520	395	176	89	43
4	93	185	422	761	1300	891	1370	561	358	195	78	40
5	87	526	367	644	664	711	823	669	330	232	83	36
6	83	464	418	813	513	644	707	547	307	208	75	34
7	81	299	514	810	567	1330	789	470	290	177	70	29
8	80	240	460	572	1070	1500	1240	441	366	164	65	26
9	81	214	334	472	993	1380	1170	427	354	154	61	23
10	84	201	286	423	702	1080	1800	414	281	151	55	20
11	89	193	282	410	678	1050	3860	387	245	145	52	20
12	97	187	829	400	670	1180	1380	372	225	136	50	18
13	104	200	1190	368	668	804	918	360	218	122	49	22
14	221	461	705	331	825	651	758	350	209	119	46	66
15	373	487	504	319	2410	578	870	357	199	111	46	90
16	216	722	1530	319	2490	535	4770	382	194	105	45	78
17	146	500	4790	308	2570	493	8230	602	191	101	42	57
18	122	356	3840	291	3430	1110	6310	493	189	96	41	45
19	114	299	885	260	2460	4640	1340	384	381	92	39	40
20	113	266	686	209	1550	6680	1040	498	1150	88	38	37
21	114	253	607	296	1150	4750	843	1310	443	84	37	36
22	113	243	572	299	929	5700	742	851	843	81	33	40
23	111	234	480	475	821	3250	691	1210	730	83	34	48
24	111	227	436	813	1200	996	1740	1350	404	87	33	43
25	180	212	412	543	1040	816	4570	627	265	92	62	40
26	2490	198	391	422	1500	709	1910	481	228	91	50	38
27	1730	196	376	367	1210	645	962	440	197	88	42	38
28	535	204	359	344	863	2590	789	381	187	83	41	37
29	345	289	352	325	---	2950	695	347	180	77	39	35
30	266	1100	374	310	---	1110	625	344	179	72	45	36
31	226	---	468	303	---	872	---	739	---	68	43	---
TOTAL	8774	9538	24636	13678	35038	54174	53675	17447	10542	3831	1624	1214
MEAN	283	318	795	441	1251	1748	1789	563	351	124	52.4	40.5
MAX	2490	1100	4790	813	3430	6680	8230	1350	1150	232	89	90
MIN	80	185	282	209	292	493	625	344	179	68	33	18
CFSM	.51	.58	1.44	.80	2.27	3.17	3.24	1.02	.64	.23	.10	.07
IN.	.59	.64	1.66	.92	2.36	3.65	3.62	1.18	.71	.26	.11	.08

CAL YR 1982	TOTAL	194734	MEAN 534	MAX 4790	MIN 80	CFSM .97	IN 13.12
WTR YR 1983	TOTAL	234171	MEAN 642	MAX 8230	MIN 18	CFSM 1.16	IN 15.78

02051600 GREAT CREEK NEAR COCHRAN, VA

LOCATION.--Lat 36°48'46", long 77°55'19", Brunswick County, Hydrologic Unit 03010204, on left bank at upstream side of bridge on State Highway 618, 1.4 mi southwest of Cochran, and 9.5 mi upstream from Roses Creek.

DRAINAGE AREA.--30.7 mi².

PERIOD OF RECORD.--May 1958 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 215.72 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--25 years, 30.3 ft³/s, 13.40 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,030 ft³/s Oct. 6, 1972, gage height, 16.65 ft, from rating curve extended above 1,600 ft³/s on basis of contracted-opening measurements at gage heights 12.08 ft, 14.57 ft, and 16.65 ft; minimum, 0.10 ft³/s Oct. 11, 12, 1965, Sept. 23, 1968; minimum gage height, 1.50 ft Aug. 19, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	2130	515	7.62	Mar. 21	1600	*1260	10.08
Mar. 19	0700	456	7.30	Apr. 16	0900	614	8.07

Minimum discharge, 0.48 ft³/s Sept. 12, gage height, 1.66 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	12	41	32	18	93	60	36	28	9.7	3.5	3.4
2	6.0	11	38	29	37	148	53	34	36	9.5	12	4.6
3	5.4	11	28	44	62	75	66	33	25	8.9	6.2	3.4
4	5.0	14	25	37	35	57	51	47	24	19	4.4	2.6
5	5.0	39	22	34	27	49	46	36	21	16	4.3	2.2
6	4.6	22	77	42	28	50	52	31	18	12	4.0	1.7
7	4.4	15	46	33	44	70	57	28	24	8.9	3.5	1.4
8	4.4	13	28	29	58	69	74	28	28	7.8	3.2	1.0
9	4.8	13	24	26	40	58	61	27	23	7.3	2.9	.74
10	5.2	12	22	26	34	52	118	25	18	6.6	2.5	.54
11	5.0	12	30	26	33	60	86	24	16	5.9	2.2	.51
12	5.0	12	86	25	32	48	61	23	14	5.9	2.0	.51
13	9.6	19	55	22	31	42	52	22	13	5.7	2.0	.74
14	31	20	36	21	63	40	48	23	12	5.5	1.7	3.2
15	12	43	35	22	131	37	79	25	12	4.8	1.7	4.0
16	8.2	35	259	22	119	35	426	36	12	4.7	1.6	2.8
17	6.6	23	218	20	155	34	112	60	11	4.2	1.4	2.0
18	5.8	20	71	19	165	156	80	30	10	4.2	1.4	1.7
19	6.0	17	53	17	103	328	76	25	10	4.0	1.3	1.4
20	6.6	16	49	16	77	96	62	88	18	3.8	1.2	1.3
21	7.0	15	44	18	62	628	53	76	34	3.6	1.0	1.4
22	6.6	14	36	22	54	255	49	59	56	3.6	1.0	4.0
23	6.2	14	32	47	55	96	48	110	25	4.0	.88	3.1
24	6.6	14	30	33	50	74	131	62	16	4.7	.74	2.2
25	56	12	29	26	64	65	81	40	12	5.2	.60	1.7
26	112	12	28	22	81	56	56	33	11	5.0	.88	1.6
27	38	12	26	22	64	68	48	29	9.5	4.6	.74	1.6
28	21	14	25	21	52	137	44	26	9.2	4.1	.74	1.4
29	15	62	26	20	---	74	40	24	8.9	3.6	2.8	1.3
30	13	64	27	20	---	59	37	25	9.5	3.4	3.2	1.6
31	12	---	33	19	---	60	---	31	---	3.2	2.5	---
TOTAL	440.4	612	1579	812	1774	3169	2307	1196	564.1	199.4	78.08	59.64
MEAN	14.2	20.4	50.9	26.2	63.4	102	76.9	38.6	18.8	6.43	2.52	1.99
MAX	112	64	259	47	165	628	426	110	56	19	12	4.6
MIN	4.4	11	22	16	18	34	37	22	8.9	3.2	.60	.51
CFSM	.46	.66	1.66	.85	2.07	3.32	2.51	1.26	.61	.21	.08	.07
IN.	.53	.74	1.91	.98	2.15	3.84	2.80	1.45	.68	.24	.09	.07

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CAL YR 1982  TOTAL  10331.30   MEAN 28.3   MAX 259   MIN 3.6   CFSM  .92   IN 12.52
WTR YR 1983  TOTAL  12790.62   MEAN 35.0   MAX 628   MIN  .51  CFSM 1.14   IN 15.50
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02052000 *MEHERRIN RIVER AT EMPORIA, VA*

(National stream-quality accounting network station)

LOCATION.--Lat 36°41'24", long 77°32'27", Emporia City, Hydrologic Unit 03010204, on left bank at downstream side of bridge on U.S. Highway 301 and 1.2 mi upstream from Falling Run.

DRAINAGE AREA.--747 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 67.17 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Prior to November 1965, low and medium flow regulated by powerplant 0.8 mi above station.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--32 years, 693 ft³/s, 12.60 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s Oct. 8, 1972, gage height, 27.38 ft; minimum, 5.0 ft³/s Nov. 11, 1954, gage height, 1.00 ft; minimum daily, 8.0 ft³/s Nov. 8-10, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 31.5 ft, from floodmarks, discharge, about 40,000 ft³/s, from rating curve extended above 18,000 ft³/s on basis of record for station near Lawrenceville.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 18	1600	6260	18.49	Apr. 18	1330	*9360	21.70
Mar. 21	0730	7870	20.17				

Minimum discharge, 16 ft³/s Sept. 13, gage height, 1.68 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	259	1160	717	419	1520	1400	831	1060	204	80	80
2	134	244	806	700	492	2980	1430	783	723	202	80	85
3	126	235	780	727	1650	3160	1310	738	587	200	101	71
4	118	237	620	930	2700	1690	1760	803	476	210	109	59
5	112	330	501	1090	1190	1210	1430	887	430	288	98	52
6	105	730	455	1400	814	1060	1110	831	393	254	101	44
7	104	434	665	1360	849	2300	1170	671	356	202	88	38
8	102	318	670	981	1240	3140	1660	613	399	189	82	30
9	100	274	482	755	1610	2360	2030	577	441	172	74	24
10	96	254	388	653	1130	1880	1770	546	367	165	63	21
11	95	244	388	612	1000	1490	4300	518	308	157	58	18
12	98	238	1050	588	980	1720	3680	494	274	151	58	17
13	136	280	1860	540	1110	1350	1620	478	256	145	50	21
14	221	344	1340	487	1330	1030	1210	467	245	141	49	61
15	374	695	833	462	3760	881	1330	467	238	137	47	117
16	330	803	1180	452	4300	791	5650	525	231	130	46	117
17	201	811	4510	439	4010	731	7500	680	227	124	44	96
18	153	514	6000	414	4350	1380	9240	764	220	119	43	67
19	134	401	3250	350	4500	4670	5020	553	210	113	42	51
20	128	356	1220	294	2900	6690	2000	589	1090	109	39	42
21	131	330	925	354	1890	7390	1400	1440	707	105	36	59
22	131	312	819	443	1450	6170	1150	1380	678	102	36	81
23	129	300	710	680	1260	6620	1040	1150	1110	98	53	52
24	137	292	615	1100	1340	2840	1550	2000	594	106	54	52
25	177	274	567	935	1690	1460	4130	1090	360	110	36	48
26	1530	259	536	665	1890	1170	4330	678	280	113	61	43
27	3370	250	508	557	2140	1060	1750	582	240	110	56	39
28	1110	259	492	514	1490	1980	1180	483	220	108	60	38
29	501	328	485	482	---	4620	1000	419	208	101	59	37
30	356	960	492	452	---	2570	906	399	204	92	48	36
31	294	---	620	434	---	1450	---	1540	---	84	51	---
TOTAL	10881	11565	34927	20567	53484	79363	75056	23976	13132	4541	1902	1596
MEAN	351	386	1127	663	1910	2560	2502	773	438	146	61.4	53.2
MAX	3370	960	6000	1400	4500	7390	9240	2000	1110	288	109	117
MIN	95	235	388	294	419	731	906	399	204	84	36	17
CFSM	.47	.52	1.51	.89	2.56	3.43	3.35	1.04	.59	.20	.08	.07
IN.	.54	.58	1.74	1.02	2.66	3.95	3.74	1.19	.65	.23	.09	.08

CAL YR 1982 TOTAL 256848 MEAN 704 MAX 6000 MIN 95 CFSM .94 IN 12.79
WTR YR 1983 TOTAL 330990 MEAN 907 MAX 9240 MIN 17 CFSM 1.21 IN 16.48

02052000 MEHERRIN RIVER AT EMPORIA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to September 1971, October 1972 to September 1978.
WATER TEMPERATURES: April 1968 to September 1971, October 1972 to September 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
NOV 18...	0730	540	82	7.2	7.5	23	11.4	1500	K5300	23
MAR 02...	0800	2640	60	6.8	7.5	27	12.2	440	K8300	17
JUN 08...	0800	379	74	7.0	21.5	18	7.8	160	400	23
SEP 01...	0800	82	102	7.1	26.5	9.4	4.4	K240	K2500	30

K Result based on colony count outside optimal range.

DATE	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV 18...	0	5.4	2.4	5.6	1.8	25	12	5.3	<.10	17
MAR 02...	4	3.9	1.7	4.5	1.5	13	10	4.6	<.10	13
JUN 08...	0	5.3	2.3	5.5	1.5	26	5.8	4.3	.10	18
SEP 01...	0	6.7	3.2	8.3	2.0	35	5.4	7.2	.10	14

< Actual value is known to be less than the value shown.

02052000 MEHERRIN RIVER AT EMPORIA, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV 18...	84	65	<.10	.050	.30	.050	.020	.020	40	1
MAR 02...	57	48	.16	.050	.30	.060	.020	.020	100	1
JUN 08...	73	59	.17	.050	.30	.050	.020	<.010	10	1
SEP 01...	90	69	.12	.130	.20	.050	.020	<.010	40	2

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 18...	31	<1	2	<1	<3	6	470	1	4	55
MAR 02...	30	<1	1	<1	<3	2	320	5	<4	32
JUN 08...	32	<1	<1	1	<3	<1	570	<1	<4	160
SEP 01...	45	<1	<1	2	<3	<1	180	2	<4	220

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 18...	<.1	20	1	<1	<1	34	<6.0	<4	18	99
MAR 02...	.2	10	1	<1	<1	29	<6.0	<3	24	98
JUN 08...	<.1	<10	1	<1	<1	42	<6.0	<3	24	96
SEP 01...	<.1	<10	1	<1	<1	63	<6.0	4	20	100

< Actual value is known to be less than the value shown.

02052500 FOUNTAINS CREEK NEAR BRINK, VA

LOCATION.--Lat 36°36'55", long 77°42'00", Greensville County, Hydrologic Unit 03010204, on left bank 30 ft upstream from bridge on State Highway 603, 0.3 mi downstream from Quarrel Creek, 3.6 mi west of Brink, and 10 mi southwest of Emporia.

DRAINAGE AREA.--65.2 mi².

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1980, published as Fontaine Creek near Brink.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 152.59 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--30 years, 67.8 ft³/s, 14.12 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s Oct. 6, 1972, gage height, 24.14 ft, from floodmark, from rating curve extended above 3,000 ft³/s; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 15	1315	1380	12.78	Apr. 16	1300	*1840	14.37
Mar. 8	0300	1220	12.12				

No flow Aug. 17-31, Sept. 6-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	4.7	68	104	30	241	122	56	223	5.0	.13	.01
2	1.4	3.7	86	76	106	558	98	51	119	5.5	.12	.01
3	.90	3.4	61	87	315	426	104	48	66	5.2	.10	.01
4	.58	5.0	42	91	172	210	90	80	59	4.1	.08	.01
5	.43	8.6	32	156	79	123	74	72	55	6.6	.08	.01
6	.39	10	29	428	69	92	73	51	42	13	.07	.00
7	.38	10	28	235	156	702	101	40	33	11	.06	.00
8	.34	11	22	119	215	974	273	36	43	9.6	.05	.00
9	.31	11	17	76	142	512	205	32	40	6.8	.04	.00
10	.27	9.1	14	65	90	286	192	28	29	5.2	.02	.00
11	.25	8.6	37	64	160	188	164	25	22	3.4	.02	.00
12	.27	9.7	478	55	250	141	111	23	18	2.8	.02	.00
13	5.7	58	517	43	297	106	84	21	15	2.2	.02	.07
14	160	62	248	36	437	88	72	20	12	2.1	.01	5.0
15	50	80	109	35	1260	79	150	21	11	1.7	.01	5.7
16	16	80	293	34	823	73	1590	33	9.9	1.5	.01	1.0
17	4.9	48	478	31	405	67	891	64	8.6	1.1	.00	.65
18	2.1	32	287	25	251	213	318	44	7.5	1.0	.00	.42
19	1.6	22	125	19	164	741	264	29	8.0	.75	.00	.27
20	1.7	18	89	16	112	630	237	176	12	.57	.00	.24
21	2.1	15	72	17	86	312	159	298	13	.54	.00	1.3
22	2.4	13	55	38	75	219	115	110	23	.43	.00	95
23	3.0	11	45	198	86	152	95	68	22	.36	.00	35
24	5.5	9.4	41	151	117	111	236	65	19	.33	.00	11
25	36	6.8	38	82	155	91	315	47	14	.30	.00	3.4
26	150	6.0	35	55	290	80	166	37	9.4	.25	.00	1.8
27	90	6.4	34	44	222	104	101	74	7.3	.21	.00	1.0
28	42	9.3	30	45	144	172	81	44	6.1	.19	.00	.62
29	19	57	31	45	---	112	69	32	5.6	.16	.00	.44
30	10	80	36	39	---	83	61	29	5.0	.15	.00	.50
31	6.7	---	78	35	---	98	---	333	---	.13	.00	---
TOTAL	616.12	708.7	3555	2544	6708	7984	6611	2087	957.4	92.17	.84	163.46
MEAN	19.9	23.6	115	82.1	240	258	220	67.3	31.9	2.97	.027	5.45
MAX	160	80	517	428	1260	974	1590	333	223	13	.13	95
MIN	.25	3.4	14	16	30	67	61	20	5.0	.13	.00	.00
CFSM	.31	.36	1.76	1.26	3.68	3.96	3.37	1.03	.49	.05	.000	.08
IN.	.35	.40	2.03	1.45	3.83	4.56	3.77	1.19	.55	.05	.00	.09

CAL YR 1982 TOTAL 20044.95 MEAN 54.9 MAX 539 MIN .20 CFSM .84 IN 11.44
WTR YR 1983 TOTAL 32027.69 MEAN 87.7 MAX 1590 MIN .00 CFSM 1.35 IN 18.27

02053800 SOUTH FORK ROANOKE RIVER NEAR SHAWSVILLE, VA

LOCATION.--Lat 37°08'24", long 80°16'00", Montgomery County, Hydrologic Unit 03010101, on right bank 95 ft downstream from bridge on State Highway 637, 0.3 mi downstream from Georges Run, 1.3 mi downstream from Elliott Creek, and 2.0 mi southwest of Shawsville.

DRAINAGE AREA.--110 mi^2.

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,361.87 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1974, water-stage recorder, and Aug. 26, 1974, to July 24, 1975, nonrecording gage at site 95 ft upstream at same datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--23 years, 109 ft^3/s, 13.46 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft^3/s June 21, 1972, gage height, 11.12 ft, from high-water mark in well, from rating curve extended above 3,700 ft^3/s on basis of slope-area measurement of peak flow; minimum, 7.5 ft^3/s July 27-29, 1966, gage height, 0.37 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 30, 1959, reached a stage of 9.89 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0830	1080	3.40	Apr. 10	0400	*4990	7.79
Mar. 18	2230	2480	5.32	Apr. 24	0530	1190	3.57

Minimum discharge, 19 ft^3/s Sept. 9-13, gage height, 0.74 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	54	240	74	107	173	194	207	115	74	33	24
2	29	52	223	73	377	167	316	194	110	67	34	23
3	28	50	181	76	445	152	577	194	103	63	34	23
4	28	114	147	71	273	144	383	201	132	59	33	22
5	49	132	129	67	191	139	297	172	108	57	33	22
6	40	97	124	67	169	165	252	160	100	56	32	22
7	34	81	104	66	147	185	254	149	110	51	30	21
8	33	70	91	65	127	214	262	149	98	50	28	20
9	40	65	85	65	117	265	460	141	90	48	28	20
10	64	61	79	78	114	285	2750	134	88	47	27	19
11	50	57	79	96	95	299	898	132	82	47	28	19
12	43	60	99	88	94	259	550	127	78	44	30	19
13	94	114	80	78	98	217	404	124	76	42	29	22
14	96	84	80	76	100	189	343	127	78	43	28	29
15	61	76	82	79	99	167	395	129	96	41	27	26
16	49	69	691	68	123	148	363	181	86	41	26	25
17	43	65	423	66	187	147	327	158	117	40	25	23
18	40	67	256	60	247	1350	303	139	124	40	25	23
19	38	63	195	57	226	1370	271	139	185	38	24	22
20	38	62	161	61	231	580	243	146	155	36	23	22
21	37	65	137	64	245	491	220	175	120	35	22	27
22	37	67	117	71	285	371	204	201	136	38	22	34
23	36	71	110	90	472	294	230	220	112	53	23	28
24	36	73	105	110	456	254	983	181	92	68	25	27
25	208	69	99	88	325	223	600	152	84	50	37	26
26	244	67	95	79	239	192	408	141	76	44	31	25
27	124	65	89	84	198	208	327	129	70	41	28	25
28	89	78	86	91	177	221	279	122	68	37	28	25
29	73	516	85	90	---	196	247	163	72	36	27	24
30	64	286	81	103	---	181	223	132	78	35	26	27
31	59	---	77	111	---	201	---	120	---	34	24	---
TOTAL	1934	2850	4630	2412	5964	9447	13563	4839	3039	1455	870	714
MEAN	62.4	95.0	149	77.8	213	305	452	156	101	46.9	28.1	23.8
MAX	244	516	691	111	472	1370	2750	220	185	74	37	34
MIN	28	50	77	57	94	139	194	120	68	34	22	19
CFSM	.57	.86	1.36	.71	1.94	2.77	4.11	1.42	.92	.43	.26	.22
IN.	.65	.96	1.57	.82	2.02	3.19	4.59	1.64	1.03	.49	.29	.24

CAL YR 1982 TOTAL 41497 MEAN 114 MAX 1040 MIN 25 CFSM 1.04 IN 14.03
WTR YR 1983 TOTAL 51717 MEAN 142 MAX 2750 MIN 19 CFSM 1.29 IN 17.49

02054500 ROANOKE RIVER AT LAFAYETTE, VA

LOCATION.--Lat 37°14'11", long 80°12'34", Montgomery County, Hydrologic Unit 03010101, on right bank 120 ft upstream from bridge on State Highway 603 at Lafayette, 0.4 mi downstream from confluence of North and South Forks, and 1.1 mi upstream from Cove Hollow.

DRAINAGE AREA.--257 mi².

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1333: 1944-47(M), 1948-49.

GAGE.--Water-stage recorder. Datum of gage is 1,174.47 ft National Geodetic Vertical Datum of 1929. Prior to July 30, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good. Occasional diurnal fluctuation caused by meat-processing plant above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--40 years, 241 ft³/s, 12.73 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s June 21, 1972, gage height, 15.60 ft, from floodmarks, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 10 ft³/s Jan. 14, 15, 18, 19, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 12.2 ft, from information by local residents, discharge, 19,000 ft³/s, from rating curve extended above 12,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0015	5700	8.13	Apr. 24	0745	3710	6.61
Apr. 10	0815	*9400	10.21				

Minimum discharge, 34 ft³/s Sept. 9, 10, 11-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	84	542	143	178	347	430	398	199	117	59	43
2	52	81	520	139	512	326	506	366	189	106	64	42
3	50	80	375	143	823	295	1150	354	179	102	102	42
4	50	155	300	132	513	274	808	362	230	100	88	40
5	99	180	253	123	367	260	641	310	189	97	64	40
6	79	140	236	122	326	280	548	284	188	93	58	38
7	63	120	203	119	286	314	862	265	235	85	54	37
8	61	102	174	116	249	447	1160	257	185	81	51	35
9	63	99	158	113	223	636	998	245	160	81	49	35
10	96	93	146	122	224	644	5690	229	147	79	47	35
11	84	87	146	150	203	639	1970	218	134	78	48	34
12	74	87	198	146	200	544	1210	210	124	75	55	36
13	128	146	166	139	198	450	866	204	117	72	52	59
14	170	121	150	133	198	387	693	203	127	72	49	59
15	105	108	162	132	203	342	795	203	150	69	47	47
16	84	102	1560	127	298	305	746	279	139	67	47	43
17	74	96	998	108	526	299	641	259	151	65	45	40
18	68	102	575	90	725	3320	580	222	231	64	45	38
19	66	99	420	76	618	3400	516	223	419	63	45	37
20	63	96	341	89	591	1380	445	267	415	62	43	37
21	66	99	292	100	585	1640	396	322	294	59	41	45
22	63	99	249	110	633	1140	358	404	235	67	41	62
23	61	108	228	140	948	822	390	472	200	93	47	48
24	61	118	211	211	939	673	2720	354	162	113	55	44
25	232	118	203	189	686	570	1360	295	141	91	63	43
26	415	111	190	171	512	477	889	263	125	78	59	42
27	215	105	182	167	418	472	687	233	116	72	52	40
28	150	118	174	172	369	493	568	214	111	66	50	40
29	121	1020	170	168	---	429	486	283	114	63	48	39
30	105	569	158	175	---	394	436	243	128	60	45	42
31	93	---	146	187	---	436	---	214	---	58	42	---
TOTAL	3163	4643	9826	4252	12551	22435	29545	8655	5534	2448	1655	1262
MEAN	102	155	317	137	448	724	985	279	184	79.0	53.4	42.1
MAX	415	1020	1560	211	948	3400	5690	472	419	117	102	62
MIN	50	80	146	76	178	260	358	203	111	58	41	34
CFSM	.40	.60	1.23	.53	1.74	2.82	3.83	1.09	.72	.31	.21	.16
IN.	.46	.67	1.42	.62	1.82	3.25	4.28	1.25	.80	.35	.24	.18

CAL YR 1982 TOTAL 88047 MEAN 241 MAX 2990 MIN 41 CFSM .94 IN 12.74
WTR YR 1983 TOTAL 105969 MEAN 290 MAX 5690 MIN 34 CFSM 1.13 IN 15.34

02055000 ROANOKE RIVER AT ROANOKE, VA

LOCATION.--Lat 37°15'30", long 79°56'20", Roanoke City, Hydrologic Unit 03010101, on left bank 50 ft downstream from Walnut Street Bridge, 3.2 mi upstream from Tinker Creek, and at mile 360.6.

DRAINAGE AREA.--395 mi².

PERIOD OF RECORD.--February 1899 to current year. Monthly discharge only for some periods, published in WSP 1303. Records for July 1896 to January 1899 published in WSP 11, 15, and 27, and 20th Annual Report, Part 4, are unreliable, due to doubtful gage-height record, and should not be used.

REVISED RECORDS.--WSP 972: 1928, 1930, 1933. WSP 1433: 1899-1904, 1914-17(M), 1918-24, 1925-27(M), 1929-34(M), 1935, 1936-39(M). WSP 2104: Drainage area. WDR VA-72-1: 1928(M), 1940(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 906.84 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 7, 1937, nonrecording gage on downstream side of highway bridge 50 ft upstream at same datum.

REMARKS.--Records good. Prior to 1949, diurnal fluctuation at low flow caused by powerplants above station. Appalachian Power Co. gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--84 years, 372 ft³/s, 12.79 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,300 ft³/s June 21, 1972, gage height, 19.61 ft, from floodmarks; practically no flow Dec. 23, 1909, Dec. 19, 1963, when flow was retarded by freezing, gage height, 0.0 ft; minimum daily discharge, 19 ft³/s Aug. 29, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1700	2970	4.95	Apr. 2	2000	3030	5.01
Mar. 18	2300	12200	11.78	Apr. 10	1230	*13300	12.53
Mar. 21	1500	3050	5.03	Apr. 24	1130	5490	7.15

Minimum discharge, 33 ft³/s Sept. 11, gage height, 0.32 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	121	719	211	256	516	665	609	282	180	73	50
2	62	112	797	205	719	483	1310	557	271	164	83	50
3	60	108	589	210	1380	434	2110	528	255	147	101	51
4	57	258	466	198	867	399	1380	542	308	146	124	50
5	121	254	399	177	615	378	999	474	283	142	96	48
6	114	219	355	168	531	505	816	422	242	133	84	45
7	81	177	307	164	467	569	966	393	316	125	76	42
8	72	152	269	161	400	650	1770	377	272	118	70	41
9	77	136	244	158	351	1060	1680	361	238	114	66	40
10	93	127	224	202	348	1040	9780	337	217	111	63	40
11	103	121	224	205	349	1030	3280	320	202	108	82	38
12	89	129	323	201	341	890	1830	307	188	104	77	46
13	209	160	272	185	320	741	1310	298	175	100	69	76
14	230	174	229	175	308	630	1050	298	170	98	66	131
15	155	144	243	176	323	549	1190	298	203	94	61	69
16	116	134	1580	173	455	479	1170	388	198	91	59	57
17	97	128	1630	149	763	444	965	404	188	90	57	54
18	86	134	921	155	1140	7240	869	324	287	86	56	52
19	81	133	673	114	990	7100	789	320	425	85	53	48
20	79	147	549	135	916	2560	689	388	631	83	53	46
21	77	138	459	149	889	2400	623	418	435	79	52	62
22	77	143	389	162	938	1850	562	556	336	100	50	62
23	76	150	346	210	1290	1280	676	626	304	102	83	66
24	72	158	319	278	1420	1020	4180	521	249	147	79	57
25	258	164	300	276	1050	847	2300	427	217	121	68	54
26	552	154	286	255	794	711	1420	376	192	101	73	52
27	338	150	271	247	645	728	1080	333	175	91	67	51
28	233	198	258	252	561	734	890	303	162	85	61	51
29	181	1230	250	251	---	674	761	402	189	80	56	49
30	152	939	235	252	---	666	673	355	218	79	54	61
31	134	---	221	261	---	675	---	304	---	76	52	---
TOTAL	4196	6492	14347	6115	19426	39282	47783	12566	7828	3380	2164	1639
MEAN	135	216	463	197	694	1267	1593	405	261	109	69.8	54.6
MAX	552	1230	1630	278	1420	7240	9780	626	631	180	124	131
MIN	57	108	221	114	256	378	562	298	162	76	50	38
CFSM	.34	.55	1.17	.50	1.76	3.21	4.03	1.03	.66	.28	.18	.14
IN.	.40	.61	1.35	.58	1.83	3.70	4.50	1.18	.74	.32	.20	.15

CAL YR 1982 TOTAL 129758 MEAN 356 MAX 3960 MIN 48 CFSM .90 IN 12.22
WTR YR 1983 TOTAL 165218 MEAN 453 MAX 9780 MIN 38 CFSM 1.15 IN 15.56

02055100 TINKER CREEK NEAR DALEVILLE, VA

LOCATION.--Lat 37°25'03", long 79°56'08", Botetourt County, Hydrologic Unit 03010101, on left bank 1,100 ft downstream from Norfolk and Western Railway bridge, 0.2 mi downstream from unnamed tributary, 0.5 mi south of Glebe Mills, and 1.3 mi northwest of Daleville.

DRAINAGE AREA.--11.7 mi².

PERIOD OF RECORD.--April 1956 to current year.

REVISED RECORDS.--WSP 1904: 1958-60(P). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,217.47 ft National Geodetic Vertical Datum of 1929. and Western Railway bench mark).

REMARKS.--Records good except those for period of doubtful or no gage-height record, Dec. 2 to Jan. 4, which are fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--27 years, 11.6 ft³/s, 13.46 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft³/s June 21, 1972, gage height, 9.82 ft, from rating curve extended above 100 ft³/s on basis of contracted-opening measurement at gage height 9.82 ft and slope-area measurements at gage heights 8.52 ft and 9.82 ft; minimum, 0.20 ft³/s Jan. 24, 1961, result of freezeup; minimum daily, 0.90 ft³/s July 26, 1966; minimum gage height, 0.99 ft June 12, 24, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1940 reached a stage of 9.0 ft, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 18	2000	427	4.63	Apr. 10	0245	*1170	6.78
Apr. 2	1930	546	5.09	Apr. 15	1230	278	3.94
Apr. 9	2130	352	4.30	Apr. 24	0015	420	4.60

Minimum daily discharge, 1.7 ft³/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	4.0	20	9.6	8.0	19	23	28	9.9	5.9	4.3	2.3
2	2.5	3.8	30	9.4	45	18	116	26	9.5	5.5	4.3	2.2
3	2.4	3.7	25	9.2	31	16	69	24	11	5.3	4.1	2.4
4	2.3	15	20	8.8	22	16	44	23	12	5.3	4.3	2.5
5	2.8	12	15	8.6	17	15	38	21	9.5	5.7	4.1	2.4
6	2.7	8.3	13	8.0	17	24	35	19	9.9	5.3	3.9	2.2
7	3.0	7.0	11	8.0	16	23	47	19	9.5	5.1	3.9	2.1
8	3.2	6.2	9.5	7.7	14	32	43	18	8.6	5.1	3.8	2.0
9	3.9	5.7	8.5	7.7	14	31	79	17	8.0	4.9	3.6	1.9
10	5.5	5.4	7.5	10	14	34	258	16	8.0	4.9	3.6	1.8
11	4.5	4.8	7.0	9.2	15	30	68	16	7.7	4.9	3.8	1.7
12	4.0	5.2	8.0	8.0	13	26	51	15	7.4	4.7	4.1	2.5
13	6.9	5.4	10	7.7	12	24	43	15	7.2	4.7	3.8	3.9
14	6.0	4.6	9.0	7.7	12	22	39	14	6.9	4.7	3.4	3.9
15	4.5	4.4	8.0	7.7	13	21	91	14	6.9	4.5	3.3	3.4
16	4.1	4.2	80	7.4	15	19	52	16	6.6	4.5	3.1	2.9
17	3.5	4.2	70	6.8	24	20	43	14	6.6	4.3	3.0	2.7
18	3.2	4.2	50	6.2	28	175	39	13	6.6	4.5	2.8	2.6
19	3.0	4.0	35	5.5	26	95	35	14	7.2	4.5	2.7	2.4
20	3.0	4.4	30	6.0	26	52	32	14	7.2	4.3	2.6	2.3
21	2.9	4.4	25	6.9	26	75	30	16	6.6	4.5	2.6	4.7
22	2.9	4.3	20	7.7	28	46	29	15	6.4	5.5	2.5	4.3
23	2.8	4.1	17	11	41	39	56	14	6.4	5.5	3.4	3.6
24	2.6	4.4	15	11	32	35	134	12	5.9	7.7	3.8	3.4
25	18	4.4	14	9.9	27	32	52	11	5.7	5.3	3.8	3.1
26	11	4.3	13	9.2	23	30	42	11	5.3	4.9	3.6	3.0
27	6.8	4.1	12	8.9	22	34	37	10	5.3	4.7	3.4	2.7
28	5.5	7.9	12	8.6	20	30	34	10	5.3	4.5	3.2	2.6
29	4.8	37	11	8.6	---	27	31	16	5.7	4.5	2.9	2.4
30	4.5	14	11	8.3	---	24	29	12	6.6	4.3	2.7	2.6
31	4.2	---	10	8.0	---	25	---	10	---	4.5	2.5	---
TOTAL	139.6	205.4	626.5	257.3	601.0	1109	1719	493	225.4	154.5	106.9	82.5
MEAN	4.50	6.85	20.2	8.30	21.5	35.8	57.3	15.9	7.51	4.98	3.45	2.75
MAX	18	37	80	11	45	175	258	28	12	7.7	4.3	4.7
MIN	2.3	3.7	7.0	5.5	8.0	15	23	10	5.3	4.3	2.5	1.7
CFSM	.39	.59	1.73	.71	1.84	3.06	4.90	1.36	.64	.43	.30	.24
IN.	.44	.65	1.99	.82	1.91	3.53	5.47	1.57	.72	.49	.34	.26

CAL YR 1982 TOTAL 3690.6 MEAN 10.1 MAX 132 MIN 1.9 CFSM .86 IN 11.73
WTR YR 1983 TOTAL 5720.1 MEAN 15.7 MAX 258 MIN 1.7 CFSM 1.34 IN 18.19

02056000 ROANOKE RIVER AT NIAGARA, VA

LOCATION.--Lat 37°15'18", long 79°52'18", Roanoke County, Hydrologic Unit 03010101, on right bank 200 ft downstream from powerplant of Appalachian Power Co. at Niagara, 2 mi downstream from Tinker Creek, 2.1 mi southeast of Vinton, and at mile 355.3.

DRAINAGE AREA.--512 mi².

PERIOD OF RECORD.--July 1926 to current year.

REVISED RECORDS.--WSP 972: 1927(M), 1929(M), 1934(M), 1937(M). WSP 1303: 1928, 1930, 1933-38, 1940. WSP 2104: Drainage area. WDR VA-72-1: 1928(M), 1930(M), 1933(M), 1935-36(M), 1938(M), 1940, 1944-45(M), 1948-49(M), 1951(M), 1955(M), 1960(M), 1967(M), 1969(M).

GAGE.--Water-stage recorder. Datum of gage is 820.15 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Flow regulated by dam and powerplant 200 ft above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 512 ft³/s, 13.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,300 ft³/s Apr. 27, 1978, gage height, 19.12 ft, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement at gage height 18.98 ft; minimum, 1.0 ft³/s Oct. 16, 20, 1956; minimum daily, 8 ft³/s Oct. 9, 1954; minimum gage height, 0.17 ft Aug. 25, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 18	2300	16100	14.65	Apr. 10	0630	*18700	15.60
Mar. 21	1545	3700	7.87	Apr. 24	1130	7390	10.62
Apr. 2	2200	6260	9.89				

Minimum discharge, 25 ft³/s Oct. 18, 21, 22, gage height, 0.70 ft; minimum daily, 84 ft³/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	209	890	278	342	728	832	872	422	337	143	121
2	100	182	942	299	1030	675	2260	805	404	292	154	115
3	98	187	708	280	1700	590	3400	769	402	284	245	147
4	94	451	586	288	1070	503	2020	770	468	207	323	125
5	300	367	508	284	780	506	1470	698	408	316	178	109
6	270	309	502	244	686	679	1230	644	392	231	190	140
7	162	262	378	249	631	794	1390	591	434	220	172	88
8	145	258	359	247	568	865	2270	568	425	234	133	140
9	158	206	336	245	493	1390	2660	558	345	213	147	87
10	180	211	315	310	475	1440	13900	488	362	167	159	139
11	204	258	305	298	477	1420	4660	494	341	245	164	84
12	158	216	477	289	471	1210	2600	477	302	213	224	124
13	361	243	389	281	467	990	1880	498	298	205	147	192
14	340	253	336	253	437	840	1520	478	297	198	119	234
15	264	209	333	256	464	742	2040	456	335	190	150	162
16	198	230	1950	251	587	681	1860	569	300	181	159	126
17	190	201	1920	253	1010	608	1490	600	297	173	148	120
18	168	215	1100	249	1530	8430	1310	485	365	173	106	144
19	166	221	819	165	1390	9320	1180	479	565	168	134	91
20	160	244	684	233	1280	3130	1020	583	797	162	149	143
21	158	160	583	236	1240	2990	908	616	501	169	137	160
22	147	277	506	254	1280	2350	824	751	489	228	103	127
23	162	238	452	305	1690	1660	1030	806	429	207	217	149
24	134	241	417	409	1820	1330	5940	705	353	241	238	137
25	458	238	390	358	1370	1120	3220	592	337	230	122	146
26	642	203	375	349	1040	942	2030	529	295	204	165	93
27	420	230	360	338	849	1030	1540	459	287	185	162	99
28	329	260	372	344	761	1040	1270	446	288	154	124	147
29	285	1500	336	339	---	890	1090	591	288	156	129	145
30	230	1120	322	332	---	797	958	518	383	183	149	126
31	214	---	320	339	---	868	---	476	---	169	117	---
TOTAL	7000	9399	18270	8855	25938	50558	69802	18371	11609	6535	5007	3960
MEAN	226	313	589	286	926	1631	2327	593	387	211	162	132
MAX	642	1500	1950	409	1820	9320	13900	872	797	337	323	234
MIN	94	160	305	165	342	503	824	446	287	154	103	84
CFSM	.44	.61	1.15	.56	1.81	3.19	4.55	1.16	.76	.41	.32	.26
IN.	.51	.68	1.33	.64	1.88	3.67	5.07	1.33	.84	.47	.36	.29

CAL YR 1982	TOTAL 172825	MEAN 473	MAX 4830	MIN 75	CFSM .92	IN 12.56
WTR YR 1983	TOTAL 235304	MEAN 645	MAX 13900	MIN 84	CFSM 1.26	IN 17.10

02056650 BACK CREEK NEAR DUNDEE, VA

LOCATION.--Lat 37°13'40", long 79°52'06", Roanoke County, Hydrologic Unit 03010101, on right bank at upstream side of bridge on State Highway 660, 0.9 mi upstream from Horseshoe Branch, 1.1 mi southeast of Dundee, 2.8 mi west of Hardy Post Office, and at mile 2.4.

DRAINAGE AREA.--56.8 mi².

PERIOD OF RECORD.--July 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 822.67 ft National Geodetic Vertical Datum of 1929. Prior to Apr. 4, 1975, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 61.2 ft³/s, 14.63 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,500 ft³/s May 29, 1976, gage height, 15.00 ft, from floodmarks; minimum daily, 0.90 ft³/s Aug. 30, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of May 30, 1971, and June 21, 1972, reached a stage of 17.5 ft and 20.0 ft, respectively, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0830	937	5.47	Apr. 2	2045	2760	9.25
Feb. 2	1600	737	4.87	Apr. 10	0245	*3410	10.25
Mar. 18	2115	2720	9.19	Apr. 24	0330	1590	7.08

Minimum discharge, 3.2 ft³/s Sept. 9, 10, 12, gage height, 0.52 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	17	96	31	37	88	120	131	49	35	9.9	5.4
2	11	16	81	31	261	82	720	118	48	32	12	5.1
3	11	15	66	32	229	75	672	113	44	28	16	5.4
4	9.8	88	56	30	130	72	298	112	50	26	17	5.8
5	11	76	48	29	94	68	208	102	45	28	15	5.4
6	13	41	56	28	84	102	172	95	44	26	11	5.1
7	11	31	43	28	73	140	158	89	47	22	11	4.4
8	10	27	37	27	64	128	149	88	42	21	10	3.8
9	11	24	35	27	57	130	548	83	39	21	9.3	3.5
10	15	22	32	37	56	152	1630	77	38	20	8.5	3.5
11	16	20	31	44	42	162	451	75	37	20	8.7	3.5
12	14	20	55	38	78	131	290	72	35	18	9.9	3.7
13	28	34	43	34	65	110	217	70	34	17	10	4.0
14	42	24	38	32	54	99	182	70	33	17	8.7	7.4
15	20	22	38	32	58	89	298	69	32	16	8.5	11
16	15	20	491	29	75	79	248	80	33	15	8.2	7.2
17	13	19	220	26	113	73	192	73	32	14	7.7	6.5
18	13	20	127	25	153	1090	170	64	33	14	7.4	5.8
19	12	20	97	20	139	848	153	63	54	13	6.9	5.6
20	12	22	79	23	140	347	136	73	40	13	6.5	5.4
21	12	27	66	25	140	319	126	73	38	12	5.8	9.6
22	12	27	55	27	156	214	117	77	91	13	5.6	13
23	11	28	50	35	266	168	162	79	54	14	5.6	7.9
24	11	27	46	50	229	150	940	63	42	18	7.4	6.5
25	82	24	43	48	164	134	374	57	37	16	8.7	6.2
26	94	23	41	46	124	120	249	56	32	15	9.9	6.2
27	40	22	39	44	99	173	197	52	30	13	8.7	6.2
28	28	25	37	42	89	181	168	50	29	12	7.7	6.2
29	23	270	37	39	---	146	150	69	30	11	6.9	6.2
30	20	114	33	38	---	128	136	58	37	11	6.5	6.2
31	18	---	32	37	---	131	---	51	---	10	5.8	---
TOTAL	649.8	1165	2248	1034	3269	5929	9631	2402	1229	561	280.8	181.7
MEAN	21.0	38.8	72.5	33.4	117	191	321	77.5	41.0	18.1	9.06	6.06
MAX	94	270	491	50	266	1090	1630	131	91	35	17	13
MIN	9.8	15	31	20	37	68	117	50	29	10	5.6	3.5
CFSM	.37	.68	1.28	.59	2.06	3.36	5.65	1.36	.72	.32	.16	.11
IN.	.43	.76	1.47	.68	2.14	3.88	6.31	1.57	.80	.37	.18	.12

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CAL YR 1982  TOTAL  16891.7   MEAN 46.3   MAX   491   MIN 5.4   CFSM  .82   IN 11.06
WTR YR 1983  TOTAL  28580.3   MEAN 78.3   MAX  1630   MIN 3.5   CFSM 1.38   IN 18.72
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02056900 BLACKWATER RIVER NEAR ROCKY MOUNT, VA

LOCATION.--Lat 37°02'42", long 79°50'40", Franklin County, Hydrologic Unit 03010101, on right bank 45 ft downstream from bridge on State Highway 122, 3.0 mi northeast of Rocky Mount, and 4.1 mi upstream from Maggodee Creek.

DRAINAGE AREA.--115 mi^2.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.45 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--7 years, 138 ft^3/s, 16.30 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,130 ft^3/s Sept. 22, 1979, gage height, 16.38 ft; minimum, 7.2 ft^3/s Aug. 28, 1981, gage height, 1.16 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0930	1760	6.38	Apr. 10	0730	*6140	13.53
Mar. 18	1630	1920	6.68	Apr. 24	0500	2460	7.65
Apr. 2	2400	4140	10.45				

Minimum daily discharge, 17 ft^3/s Sept. 11-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	51	140	82	84	178	216	240	125	104	35	28
2	38	50	138	80	439	170	756	229	125	96	36	24
3	37	50	120	86	433	156	1720	225	119	102	40	24
4	38	245	111	80	242	150	553	231	155	84	37	25
5	38	201	102	77	192	145	387	210	133	79	39	23
6	47	110	106	77	186	170	320	194	125	78	36	22
7	41	87	98	74	168	242	345	188	180	70	41	20
8	39	79	88	72	152	246	331	186	131	68	35	19
9	42	73	86	70	145	254	578	182	117	67	32	18
10	56	68	82	82	147	257	3630	170	112	64	30	18
11	61	66	82	94	123	259	901	166	106	64	30	17
12	52	66	116	83	135	220	560	162	102	62	39	17
13	76	96	108	78	145	200	443	158	98	60	34	17
14	111	77	96	77	147	188	373	154	96	56	31	22
15	67	68	96	78	160	178	522	148	140	56	30	30
16	55	64	915	73	170	166	460	156	105	54	30	27
17	47	62	366	67	204	162	366	158	98	49	29	26
18	45	64	212	60	292	883	328	143	96	47	28	24
19	45	64	172	55	272	958	304	142	164	45	28	23
20	45	67	147	67	267	270	270	164	122	45	27	22
21	45	80	133	80	264	401	249	198	120	41	24	21
22	44	79	120	84	272	304	233	186	133	39	24	25
23	42	75	112	140	359	257	270	186	128	45	23	29
24	43	73	106	162	310	231	1470	164	108	52	25	26
25	68	68	100	111	252	214	550	148	98	52	35	25
26	143	66	98	99	214	196	404	142	90	46	45	25
27	83	64	94	94	194	288	342	136	84	44	34	25
28	67	68	94	92	182	416	301	130	86	39	31	23
29	60	188	93	88	---	259	272	138	86	36	28	23
30	56	152	86	87	---	225	254	143	96	36	25	22
31	54	---	83	86	---	225	---	133	---	36	25	---
TOTAL	1726	2621	4500	2635	6150	8468	17708	5310	3478	1816	986	690
MEAN	55.7	87.4	145	85.0	220	273	590	171	116	58.6	31.8	23.0
MAX	143	245	915	162	439	958	3630	240	180	104	45	30
MIN	37	50	82	55	84	145	216	130	84	36	23	17
CFSM	.48	.76	1.26	.74	1.91	2.37	5.13	1.49	1.01	.51	.28	.20
IN.	.56	.85	1.46	.85	1.99	2.74	5.73	1.72	1.13	.59	.32	.22

CAL YR 1982 TOTAL 44492 MEAN 122 MAX 1450 MIN 29 CFSM 1.06 IN 14.39
WTR YR 1983 TOTAL 56088 MEAN 154 MAX 3630 MIN 17 CFSM 1.34 IN 18.14

02057400 SMITH MOUNTAIN LAKE NEAR PENHOOK, VA

LOCATION.--Lat 37°02'28", long 79°32'09", Pittsylvania County, Hydrologic Unit 03010101, at dam on Roanoke (Staunton) River 6.5 mi northeast of Penhook and at mile 314.0.

DRAINAGE AREA.--1,024 mi^2.

PERIOD OF RECORD.--September 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to July 19, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete dam. Two ungated spillways, one near each end of dam, with crests at elevation 795 ft are each 105 ft long. Initial filling began in September 1963 during construction; water in reservoir first reached minimum power pool, elevation, 787 ft, in May 1965. Total capacity at maximum pool elevation, 811 ft, is 1,517,000 acre-ft of which 375,000 acre-ft is above the spillway crest; 157,800 acre-ft is normally used for power between elevation 787 ft, minimum power pool, and the spillway crest. Capacity at invert of lowest penstock, elevation, 601 ft, is 100 acre-ft. Figures given herein represent total contents. Reservoir is part of the Smith Mountain Combination Project (pumped storage) which is used for hydroelectric power, flood control, low-water regulation for pollution abatement and water supply, water releases for downstream fish spawning, and recreation.

COOPERATION.--Records furnished by Appalachian Power Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,250,200 acre-ft Apr. 27, 1978, elevation, 799.8 ft; minimum (after first filling to minimum power pool), 995,400 acre-ft Jan. 23, 1970, elevation, 787.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,157,800 acre-ft Apr. 10, 11, elevation, 795.7 ft; minimum, 1,050,200 acre-ft Sept. 6, elevation, 790.5 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	793.5	1111400	
Oct. 31	793.4	1109400	-2000
Nov. 30	794.1	1123600	+14200
Dec. 31	794.7	1135900	+12300
CAL YR 1982			+18400
Jan. 31	794.9	1140000	+4100
Feb. 28	794.4	1129800	-10200
Mar. 31	794.5	1131800	+2000
Apr. 30	794.0	1121600	-10200
May 31	794.7	1135900	+14300
June 30	794.3	1127700	-8200
July 31	794.4	1129800	+2100
Aug. 31	791.6	1072600	-57200
Sept. 30	791.5	1070600	-2000
WTR YR 1983			-40800

02058400 PIGG RIVER NEAR SANDY LEVEL, VA

LOCATION.--Lat 36°56'45", long 79°31'30", Pittsylvania County, Hydrologic Unit 03010101, on left bank 300 ft downstream from Harpen Creek, 0.5 mi upstream from bridge on State Highway 40, and 1.1 mi south of Sandy Level.

DRAINAGE AREA.--350 mi^2.

PERIOD OF RECORD.--May 1963 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 617.00 ft National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 18, 1963, nonrecording gage at same site and datum.

REMARKS.--Records good. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--20 years, 364 ft^3/s, 14.12 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,400 ft^3/s Apr. 27, 1978, gage height, 25.56 ft, from rating curve extended above 12,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 24 ft^3/s Aug. 29, 30, 1981, gage height, 1.95 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0230	8040	13.92	Apr. 10	1700	*11000	17.16
Apr. 3	0530	4650	9.08	Apr. 24	1230	6380	11.68

Minimum discharge, 53 ft^3/s Sept. 10, 11-13, gage height, 2.15 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	126	231	181	199	329	506	460	297	285	108	74
2	93	124	238	181	1290	325	965	443	295	260	112	78
3	91	122	220	201	2130	291	3620	431	289	235	118	79
4	89	209	206	204	630	275	1110	467	317	247	113	80
5	92	577	198	186	403	265	686	426	337	230	113	76
6	96	283	207	182	353	429	583	391	294	261	130	71
7	100	201	197	177	338	1490	686	377	343	213	148	67
8	95	175	178	177	312	721	886	375	325	197	131	61
9	99	162	169	170	290	737	981	380	284	190	108	58
10	117	157	164	171	287	559	8110	354	269	184	100	55
11	131	149	164	185	262	579	2000	343	261	187	98	55
12	125	149	222	184	315	467	975	339	252	181	115	53
13	146	414	258	171	330	390	730	337	245	171	129	54
14	273	315	202	161	342	352	621	333	241	168	110	75
15	193	216	208	164	442	328	738	345	348	164	101	104
16	133	185	1970	160	510	307	1190	342	277	158	97	98
17	113	168	1310	156	640	294	702	364	241	153	94	83
18	106	166	518	144	1090	1900	603	321	240	152	89	79
19	106	167	377	140	842	4080	600	310	410	153	87	78
20	107	168	341	149	699	1030	529	360	421	144	85	73
21	108	179	300	172	608	720	482	407	375	140	80	74
22	106	183	265	182	583	589	459	643	378	132	76	81
23	102	176	230	333	764	468	466	551	338	133	92	85
24	101	169	220	570	710	418	4490	384	269	153	107	84
25	189	160	212	376	515	386	1520	332	241	166	102	78
26	440	149	208	294	413	356	818	320	227	152	120	80
27	256	152	204	261	354	759	643	341	215	139	113	80
28	173	158	200	240	327	1660	565	303	223	129	98	79
29	146	214	201	225	---	766	515	303	294	120	95	75
30	135	288	193	215	---	535	482	362	287	114	85	72
31	129	---	183	207	---	511	---	331	---	109	78	---
TOTAL	4290	6061	9994	6519	15978	22316	37261	11775	8833	5420	3232	2239
MEAN	138	202	322	210	571	720	1242	380	294	175	104	74.6
MAX	440	577	1970	570	2130	4080	8110	643	421	285	148	104
MIN	89	122	164	140	199	265	459	303	215	109	76	53
CFSM	.39	.58	.92	.60	1.63	2.06	3.55	1.09	.84	.50	.30	.21
IN.	.46	.64	1.06	.69	1.70	2.37	3.96	1.25	.94	.58	.34	.24

CAL YR 1982 TOTAL 104124 MEAN 285 MAX 3020 MIN 59 CFSM .81 IN 11.07
WTR YR 1983 TOTAL 133918 MEAN 367 MAX 8110 MIN 53 CFSM 1.05 IN 14.23

02059400 LEESVILLE LAKE NEAR LEESVILLE, VA

LOCATION.--Lat 37°05'35", long 79°24'09", Campbell County, Hydrologic Unit 03010101, at Leesville Dam on Roanoke (Staunton) River, 2.0 mi south of Leesville, 3.5 mi upstream from Goose Creek, and at mile 296.0.

DRAINAGE AREA.--1,505 mi².

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to June 6, 1963, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete dam. Spillway, with crest at elevation 578.0 ft, is equipped with 4 radial gates 35 ft high by 50 ft wide. Storage began on Sept. 29, 1962, during construction, and water in reservoir first reached minimum power pool, elevation, 600.0 ft, on Mar. 5, 1963. Total capacity at maximum pool elevation, 613 ft, is 94,960 acre-ft of which 75,960 acre-ft is above the spillway crest; 38,200 acre-ft is normally used for power between elevations 600.0 ft, minimum power pool, and the spillway crest. Capacity at invert of lowest penstock, elevation, 579.75 ft, is 21,010 acre-ft. Figures given herein represent total contents. Reservoir is part of the Smith Mountain Combination Project (see station 02057400).

COOPERATION.--Records furnished by Appalachian Power Company.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 98,180 acre-ft Feb. 1, 1965, elevation, 614.0 ft; minimum (after first filling to minimum power pool), 39,880 acre-ft Mar. 19, 1963, elevation, 592.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 95,900 acre-ft Apr. 10, Sept. 9, elevation, 613.3 ft; minimum, 57,200 acre-ft many days during year, elevation, 600.0 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	602.1	62830	
Oct. 31	601.2	60420	-2410
Nov. 30	600.6	58810	-1610
Dec. 31	601.0	59880	+1070
CAL YR 1982			-540
Jan. 31	601.4	60950	+1070
Feb. 28	603.4	66310	+5360
Mar. 31	602.4	63630	-2680
Apr. 30	607.5	77950	+14320
May 31	603.4	66310	-11640
June 30	606.5	75010	+8700
July 31	601.0	59880	-15130
Aug. 31	611.4	89810	+29930
Sept. 30	601.9	62290	-27520
WTR YR 1983			-540

02059500 GOOSE CREEK NEAR HUDDLESTON, VA

LOCATION.--Lat 37°10'23", long 79°31'14", Bedford County, Hydrologic Unit 03010101, on left bank 0.3 mi upstream from Haden Bridge on State Highway 732, 0.4 mi upstream from Rockcastle Creek, and 3.5 mi northwest of Huddleston.

DRAINAGE AREA.--188 mi².

PERIOD OF RECORD.--March 1925 to August 1928 (gage heights only), September 1930 to current year.

REVISED RECORDS.--WSP 892: 1933, 1935(M), 1939. WSP 972: 1931-32(M), 1934(M), 1935-38, 1940, 1941(M). WSP 1082: 1940(P). WSP 1142: 1938-40(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 592.91 ft National Geodetic Vertical Datum of 1929. Mar. 15, 1925, to Aug. 4, 1928, nonrecording gage at site 1,300 ft downstream at different datum.

REMARKS.--Records good. Prior to October 1954, diurnal fluctuation at low flow caused by mill above station. Appalachian Power Company gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--53 years, 176 ft³/s, 12.71 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s Oct. 19, 1937, gage height, 25.75 ft, from floodmarks, from rating curve extended above 11,000 ft³/s on basis of slope-area measurements at gage heights 19.25 ft, 24.1 ft, and 24.89 ft; minimum, 3 ft³/s Aug. 31, 1932, Jan. 30, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1900	2330	a7.40	Apr. 10	0430	*12800	20.68
Apr. 3	0030	4820	12.20	Apr. 24	0630	3960	10.66

a From high-water mark.

Minimum discharge, 24 ft³/s Sept. 12, gage height, 1.02 ft.

DISCHARGE, IN CUBIC FEET PER SECOND. WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	60	199	94	105	181	259	370	193	125	41	32
2	44	60	202	92	350	169	756	356	186	109	44	32
3	43	60	163	97	1000	154	2190	344	171	138	45	32
4	43	102	146	90	480	146	782	356	181	111	42	33
5	46	175	132	85	300	140	574	322	174	146	41	32
6	50	115	129	85	245	149	505	303	154	107	40	31
7	45	94	115	85	220	178	532	291	154	89	44	29
8	45	85	104	85	190	211	574	284	150	81	39	28
9	46	80	99	82	178	295	1090	282	136	78	37	27
10	54	76	97	87	165	271	6350	260	131	74	36	26
11	57	72	94	94	155	325	1250	248	127	74	37	25
12	52	74	132	90	160	283	804	238	122	69	52	25
13	93	126	132	80	170	226	618	229	118	66	42	34
14	158	94	118	80	190	199	534	226	120	64	38	42
15	87	82	124	80	210	184	704	226	133	60	37	37
16	64	78	1010	78	240	166	921	246	118	59	37	31
17	52	74	618	70	410	157	635	270	114	56	36	31
18	50	74	355	64	850	572	552	219	109	52	35	30
19	51	74	244	56	600	1260	495	207	120	50	35	29
20	51	76	196	66	430	574	442	241	120	50	34	28
21	52	78	169	76	370	490	411	483	122	50	32	29
22	51	76	146	82	340	415	380	447	147	66	43	59
23	50	78	132	178	460	340	415	445	120	66	39	36
24	50	76	126	202	415	295	2520	327	105	83	37	31
25	114	74	118	140	316	259	976	279	96	74	37	31
26	176	68	115	129	253	226	621	255	92	60	37	31
27	104	70	110	122	208	294	510	236	89	54	35	31
28	82	74	107	120	190	502	452	217	100	50	34	31
29	72	359	110	110	---	349	416	234	103	48	67	30
30	68	265	99	108	---	289	392	236	136	45	38	33
31	66	---	94	105	---	280	---	205	---	42	34	---
TOTAL	2061	2949	5735	3012	9200	9579	27660	8882	3941	2296	1225	956
MEAN	66.5	98.3	185	97.2	329	309	922	287	131	74.1	39.5	31.9
MAX	176	359	1010	202	1000	1260	6350	483	193	146	67	59
MIN	43	60	94	56	105	140	259	205	89	42	32	25
CFSM	.35	.52	.98	.52	1.75	1.64	4.90	1.53	.70	.39	.21	.17
IN.	.41	.58	1.13	.60	1.82	1.90	5.47	1.76	78	.45	.24	.19

CAL YR 1982 TOTAL 51920 MEAN 142 MAX 1540 MIN 32 CFSM .76 IN 10.27
WTR YR 1983 TOTAL 77496 MEAN 212 MAX 6350 MIN 25 CFSM 1.13 IN 15.33

02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA

LOCATION.--Lat 37°06'16", long 79°17'44", Pittsylvania County, Hydrologic Unit 03010101, on right bank 12 ft upstream from bridge on alternate U.S. Highway 29, 0.3 mi south of Altavista, 0.3 mi downstream from Sycamore Creek, 3.5 mi upstream from Big Otter River, and at mile 286.5.

DRAINAGE AREA.--1,789 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1930 to current year.

REVISED RECORDS.--WSP 892: 1938(M). WSP 972: 1931-33. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 503.10 ft National Geodetic Vertical Datum of 1929. Prior to Feb. 21, 1951, on left bank 50 ft downstream at same datum.

REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 9.5 mi upstream and since 1963 by Smith Mountain Lake (station 02057400) 27.5 mi upstream. Gage-height and Corps of Engineers satellite telemeters at station. Appalachian Power Company gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 1,790 ft^3/s, 13.59 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105,000 ft^3/s Aug. 15, 1940, gage height, 40.08 ft, from floodmark, from rating curve extended above 52,000 ft^3/s on basis of unit hydrograph and flood-routing studies by Corps of Engineers and records for other stations in Roanoke River basin; minimum, 13 ft^3/s Jan. 30, 1966; minimum daily, 39 ft^3/s July 10, 1966; minimum gage height, 1.53 ft Jan. 2, 1977, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,200 ft^3/s Apr. 10, gage height, 23.60 ft; minimum, 72 ft^3/s Sept. 11, gage height, 1.61 ft; minimum daily, 73 ft^3/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1380	773	1100	332	1400	1980	3590	1180	1930	1750	584	923
2	320	324	1100	329	5570	1730	2770	2960	1860	461	920	1160
3	371	892	1560	1240	7080	1070	12900	1820	1490	412	902	244
4	998	981	421	1200	7010	1320	11100	1950	1170	438	1080	88
5	817	1050	459	909	1670	548	7170	1920	1200	1530	1280	418
6	827	565	976	966	350	436	4040	1760	1300	1350	219	985
7	864	470	950	1110	2750	3240	5110	1410	1400	1280	100	902
8	825	1030	931	383	2100	3490	9520	1420	1680	884	924	1060
9	295	741	1100	376	1790	5010	4330	1610	1450	296	961	1090
10	303	884	1090	912	1180	4430	21900	1900	1310	286	972	209
11	966	841	320	1100	5770	5850	23400	1760	361	876	933	73
12	869	1310	376	911	3080	3820	13700	1800	347	909	1130	1030
13	922	523	1010	871	1000	607	9670	1790	1140	1450	248	960
14	1020	437	967	1060	2890	348	9320	1430	1000	415	98	983
15	1000	968	967	313	1880	324	5400	1490	1940	388	1120	986
16	310	939	4270	321	1020	295	2890	1820	1150	372	986	643
17	280	929	6260	1080	656	2300	1980	2620	1400	369	921	291
18	986	946	3390	847	3750	9250	5990	2570	362	793	942	223
19	1030	1270	2660	910	3480	16400	5290	1730	351	827	941	959
20	904	377	3440	882	806	13800	4220	1780	1820	739	214	981
21	898	376	2120	889	3140	10800	3420	1610	2220	1040	84	967
22	627	1390	1620	373	6360	7620	3410	1740	1620	1350	1170	783
23	296	1460	1590	455	6540	6240	4650	2940	1510	286	1060	767
24	331	1220	1470	2940	6760	3840	13000	3080	1400	140	1090	304
25	910	299	415	1650	6760	3200	11800	3040	339	1250	975	227
26	1070	294	411	1030	775	675	11100	2390	307	913	686	947
27	886	415	1430	964	356	479	5040	2040	2010	921	210	951
28	877	350	1500	971	1830	5910	4170	1370	1110	916	108	966
29	943	1020	1080	412	---	4220	4270	1360	1170	1090	961	1010
30	496	1090	1180	402	---	3630	3580	1560	1210	364	988	813
31	334	---	919	945	---	5640	---	1580	---	347	920	---
TOTAL	22955	24164	47081	27083	87753	128502	228730	59430	37557	24442	23727	21943
MEAN	740	805	1519	874	3134	4145	7624	1917	1252	788	765	731
MAX	1380	1460	6260	2940	7080	16400	23400	3080	2220	1750	1280	1160
MIN	280	294	320	313	350	295	1980	1180	307	140	84	73
(*)	-72	+212	+217	+84	-87	-11	+70	+44	+8	-212	-443	-496
MEAN‡	668	1017	1736	958	3047	4134	7694	1961	1260	576	322	235
CFSM‡	.37	.57	.97	.54	1.70	2.31	4.30	1.10	.70	.32	.18	.13
IN‡	.43	.63	1.12	.62	1.77	2.66	4.80	1.26	.79	.37	.21	.15

CAL YR 1982 TOTAL 533799 MEAN 1462 MAX 12200 MIN 221 MEAN‡ 1486 CFSM‡ .83 IN‡ 11.28
WTR YR 1983 TOTAL 733367 MEAN 2009 MAX 23400 MIN 73 MEAN‡ 1952 CFSM‡ 1.09 IN‡ 14.82

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes; furnished by Appalachian Power Co.

‡ Adjusted for change in contents.

02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1953-56, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1950 to September 1951, February 1953 to September 1956, April 1968 to current year.
WATER TEMPERATURES: October 1950 to September 1951, February 1953 to September 1956, April 1968 to current year.
SUSPENDED-SEDIMENT DISCHARGE: February 1953 to September 1956.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 580 micromhos Jan. 17, 1969; minimum daily, 54 micromhos Aug. 18, 1955.
WATER TEMPERATURES: Maximum daily, 30.0°C Aug. 10, 1951, Aug. 11, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 210 micromhos Sept. 7; minimum daily, 75 micromhos Feb. 18, 20.
WATER TEMPERATURES: Maximum daily, 27.5°C Aug. 21; minimum daily, 1.0°C Jan. 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
NOV 02...	1045	334	171	7.8	15.5	15	--	66	6	16	6.3	10
DEC 15...	1015	1560	150	7.7	4.5	16	--	60	8	14	6.1	6.2
JAN 18...	0930	308	152	7.7	1.5	10	--	57	4	13	5.9	9.8
MAR 16...	1030	296	122	7.5	10.0	30	10.7	36	0	8.9	3.4	8.5
APR 27...	0945	4660	141	7.5	10.5	15	--	54	7	13	5.3	5.8
JUN 29...	1100	391	172	--	22.0	35	8.4	56	6	14	5.1	11
AUG 10...	1015	414	185	7.7	23.0	30	--	69	7	17	6.4	11
SEP 21...	1036	438	174	7.6	22.0	2	7.7	70	7	17	6.6	5.9

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 02...	2.3	60	14	9.8	.10	7.3	105	103	.010	.14	.090	52
DEC 15...	1.9	52	11	6.6	.20	8.6	86	86	<.010	.23	.020	45
JAN 18...	2.2	53	14	8.9	.10	8.6	99	95	<.010	.40	.060	49
MAR 16...	1.5	39	12	6.3	<.10	12	85	77	<.010	.19	.200	160
APR 27...	1.8	47	13	7.0	.10	6.9	83	81	<.010	.29	.010	39
JUN 29...	2.1	50	12	12	.10	9.2	118	97	.010	.31	.150	41
AUG 10...	2.1	62	15	12	.10	6.4	107	107	<.010	.30	.080	18
SEP 21...	2.1	63	14	7.8	.20	5.7	92	97	<.010	<.10	<.010	6

< Actual value is known to be less than the value shown.

02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	175	160	140	159	140	---	140	161	160	178	184
2	---	170	143	145	157	140	---	125	160	163	179	180
3	---	175	125	142	78	115	---	140	160	155	180	181
4	---	150	150	160	140	133	120	128	161	160	181	160
5	---	163	130	135	139	130	118	150	161	---	180	159
6	---	158	153	140	---	---	140	140	161	---	180	178
7	---	170	158	158	105	145	100	141	158	---	181	210
8	---	170	150	143	150	130	133	160	159	150	170	199
9	---	165	160	160	149	120	120	160	161	150	170	200
10	---	142	145	158	150	138	---	160	160	160	168	198
11	---	173	160	167	---	133	---	150	161	140	183	200
12	---	175	170	160	142	135	---	160	142	158	185	180
13	---	163	145	161	---	100	---	158	140	170	178	182
14	---	165	162	160	142	100	---	158	160	180	160	190
15	---	165	158	161	116	110	---	160	156	178	158	199
16	---	150	130	154	126	115	---	160	155	178	180	199
17	---	163	98	150	90	120	---	160	145	165	182	200
18	---	165	100	157	75	155	---	158	163	160	184	196
19	---	170	130	159	137	158	---	159	138	175	180	198
20	---	165	130	162	75	143	---	140	135	178	184	200
21	175	150	145	161	140	140	---	140	160	180	160	200
22	175	163	142	161	150	110	---	141	160	178	178	190
23	177	150	142	---	138	150	---	141	163	175	179	182
24	---	170	158	115	157	120	---	160	160	165	185	182
25	157	170	---	140	157	---	---	150	160	165	181	184
26	165	145	---	150	---	---	100	158	158	160	181	182
27	170	150	145	135	93	---	---	160	125	180	183	195
28	160	165	160	145	108	---	---	160	160	175	180	184
29	160	135	165	145	---	138	---	159	140	175	160	190
30	163	113	163	135	---	---	135	162	160	176	180	180
31	---	---	163	142	---	---	---	159	---	179	183	---
MEAN	167	160	146	150	128	130	121	152	155	167	177	189

WTR YR 1983 MEAN 156 MAX 210 MIN 75

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	16.5	12.5	7.0	5.0	5.0	---	14.5	17.0	20.0	26.0	25.0
2	---	15.0	12.0	6.0	6.5	6.0	---	14.0	18.0	21.0	24.0	23.0
3	---	17.0	12.5	7.0	6.5	6.5	---	15.0	19.0	24.5	22.5	21.0
4	---	17.0	13.5	8.0	5.0	8.5	10.0	14.5	18.0	26.0	23.5	24.0
5	---	15.0	14.0	5.5	4.0	8.5	9.5	15.5	18.0	---	22.5	23.0
6	---	12.5	14.0	5.0	---	---	10.5	14.5	18.0	---	22.0	24.5
7	---	12.0	11.5	8.5	3.5	8.0	11.0	14.0	19.0	---	21.0	24.0
8	---	11.5	13.0	7.0	4.0	9.5	10.5	14.0	18.0	24.0	21.5	25.0
9	---	12.0	8.5	6.0	3.5	9.5	11.0	16.0	19.0	23.0	21.0	22.0
10	---	12.5	11.5	6.5	5.0	8.5	---	15.0	18.5	23.5	22.5	24.5
11	---	12.0	9.0	8.0	---	8.0	---	14.5	19.0	23.0	23.0	24.0
12	---	13.5	6.0	6.0	4.0	8.0	---	14.5	21.0	25.0	23.0	23.5
13	---	13.0	4.5	7.0	---	7.0	---	14.5	22.5	22.0	22.0	24.0
14	---	12.0	10.0	4.0	4.5	7.5	---	15.0	22.0	21.0	21.5	22.0
15	---	13.5	5.5	4.0	2.0	8.0	---	17.5	19.5	24.5	20.5	21.5
16	---	9.0	9.0	3.5	3.0	10.5	---	16.0	22.0	25.0	20.5	20.0
17	---	9.0	6.0	2.5	5.5	10.0	---	16.0	20.0	25.5	21.0	19.5
18	---	13.5	5.5	2.0	4.5	8.5	---	14.5	21.0	25.0	24.0	21.0
19	---	12.0	5.0	1.5	5.5	9.5	---	15.0	22.0	23.0	23.5	23.5
20	---	13.0	5.0	1.5	5.0	10.0	---	17.0	22.5	23.5	25.0	22.5
21	18.5	13.5	6.5	2.5	6.5	9.5	---	17.0	20.0	23.5	27.5	23.0
22	18.0	13.5	5.5	2.0	5.5	9.0	---	17.0	20.5	23.0	26.0	21.0
23	17.0	13.0	6.5	---	7.0	9.0	---	17.0	20.0	22.5	23.5	20.0
24	---	14.0	8.5	1.0	6.5	7.0	---	17.5	21.5	22.5	23.5	19.0
25	15.0	9.5	---	4.0	6.5	---	---	16.5	22.0	22.0	22.0	18.0
26	16.5	10.0	---	3.5	---	---	7.0	17.5	23.0	21.0	22.0	17.0
27	16.0	11.5	11.0	4.0	5.5	---	---	16.5	24.5	21.0	23.0	17.5
28	12.5	11.0	9.5	4.5	4.5	---	---	16.5	23.0	21.5	24.0	21.0
29	13.0	9.5	10.5	5.0	---	13.5	---	17.0	22.0	23.5	25.0	20.5
30	14.5	8.5	9.0	5.5	---	---	14.0	17.0	21.5	23.0	25.5	19.5
31	---	---	8.5	5.0	---	---	---	17.5	---	25.0	22.5	---
MEAN	15.5	12.5	9.0	5.0	5.0	8.5	10.5	16.0	20.5	23.0	23.0	22.0

WTR YR 1983 MEAN 14.5 MAX 27.5 MIN 1.0

02061500 BIG OTTER RIVER NEAR EVINGTON, VA

LOCATION.--Lat 37°12'30", long 79°18'14", Campbell County, Hydrologic Unit 03010101, on right bank 60 ft upstream from bridge on State Highway 682, 2.0 mi southwest of Evington, and 2.1 mi upstream from Flat Creek.

DRAINAGE AREA.--320 mi².

PERIOD OF RECORD.--October 1936 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1965, published as Otter River near Evington.

REVISED RECORDS.--WSP 852: 1937. WSP 892: 1938-39(M). WSP 972: 1937-39. WSP 1032: 1940. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 544.02 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--47 years, 328 ft³/s, 13.92 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s Oct. 19, 1937, Aug. 19, 1939, gage height, 23.1 ft, from rating curve extended above 7,000 ft³/s on basis of unit hydrograph and flood-routing studies by Corps of Engineers, and records for other stations in Roanoke River basin; minimum, 7.5 ft³/s Sept. 14, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s and maximum (*

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 3	0530	5650	14.22	Apr. 10	1100	*13100	19.29

Minimum discharge, 32 ft³/s Sept. 12, gage height, 0.16 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	109	273	164	194	328	445	499	276	207	68	55
2	86	107	330	162	860	319	806	473	270	168	68	50
3	83	108	254	170	1340	290	3400	455	256	235	68	50
4	82	152	228	164	622	277	1150	484	272	168	85	50
5	83	256	209	155	432	268	823	420	267	193	86	48
6	84	160	208	154	386	327	714	387	245	176	70	45
7	87	138	191	150	360	546	752	370	237	141	66	42
8	85	129	176	146	356	436	822	363	251	128	63	38
9	88	127	169	141	317	597	903	363	232	121	58	36
10	92	124	161	148	308	479	8540	335	216	116	53	34
11	96	120	162	168	281	477	1970	327	209	112	52	33
12	97	122	217	155	300	412	1210	318	200	109	77	33
13	154	210	215	140	310	366	951	309	191	104	77	33
14	292	185	194	135	316	345	813	324	277	100	61	63
15	144	148	203	137	355	329	886	328	267	98	57	65
16	112	136	1420	133	492	308	970	349	225	94	55	52
17	96	129	883	125	804	292	755	396	187	88	53	47
18	95	128	475	110	1150	377	678	309	181	82	53	43
19	96	127	361	89	823	1180	619	298	199	86	55	40
20	98	128	307	110	647	636	554	392	187	82	51	37
21	98	135	272	135	534	549	507	558	196	78	46	35
22	96	133	239	155	487	488	476	633	238	89	74	43
23	93	136	225	310	582	422	479	641	201	112	73	61
24	92	133	215	348	578	391	2650	442	172	143	68	43
25	140	126	205	242	471	371	1260	375	158	140	61	41
26	232	122	199	230	407	343	875	345	145	104	58	40
27	160	123	193	217	356	519	740	324	138	94	54	39
28	129	129	186	211	335	898	652	302	142	85	50	37
29	119	548	189	200	---	566	580	327	169	78	139	36
30	113	377	175	200	---	461	532	329	229	74	87	43
31	110	---	167	199	---	455	---	294	---	70	58	---
TOTAL	3521	4805	8901	5303	14403	14052	36512	12069	6433	3675	2044	1312
MEAN	114	160	287	171	514	453	1217	389	214	119	65.9	43.7
MAX	292	548	1420	348	1340	1180	8540	641	277	235	139	65
MIN	82	107	161	89	194	268	445	294	138	70	46	32
CFSM	.36	.50	.90	.53	1.61	1.42	3.80	1.22	.67	.37	.21	.14
IN.	.41	.56	1.03	.62	1.67	1.63	4.24	1.40	.75	.43	.24	.15

CAL YR 1982 TOTAL 111150 MEAN 305 MAX 3850 MIN 68 CFSM .95 IN 12.92
WTR YR 1983 TOTAL 113030 MEAN 310 MAX 8540 MIN 33 CFSM .97 IN 13.14

02062500 ROANOKE (STAUNTON) RIVER AT BROOKNEAL, VA

LOCATION.--Lat 37°02'28", long 78°57'02", Campbell County, Hydrologic Unit 03010102, on left bank 1,600 ft upstream from bridge on U.S. Highway 501 at Brookneal, 2.9 mi upstream from Falling River, and at mile 255.9.

DRAINAGE AREA.--2,415 mi^2.

PERIOD OF RECORD.--April 1923 to current year.

REVISED RECORDS.--WSP 892: 1928(M). WSP 972: 1928-34. WSP 1303: 1924-27(M), 1929(M), 1941(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 351.96 ft National Geodetic Vertical Datum of 1929. Apr. 30, 1923, to Aug. 29, 1929, nonrecording gage, Aug. 30, 1929, to Aug. 15, 1940, water-stage recorder, and Aug. 16 to Oct. 1, 1940, nonrecording gage at site 1,800 ft downstream at same datum. Oct. 2, 1940, to Sept. 30, 1941, nonrecording gage at site 1,600 ft downstream at same datum.

REMARKS.--Records fair. Flow regulated since 1962 by Leesville Lake (station 02059400) 40.1 mi upstream and since 1963 by Smith Mountain Lake (station 02057400) 58.1 mi upstream. Gage-height telemeters at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--60 years, 2,384 ft^3/s, 13.41 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft^3/s Aug. 15, 1940, gage height, 46.5 ft, at present site, from gage-height relation curve, from rating curve extended above 55,000 ft^3/s on basis of slope-area measurement by Geological Survey, unit hydrograph and flood-routing studies by Corps of Engineers, and records for other stations in Roanoke River basin; minimum daily, 140 ft^3/s July 25, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,500 ft^3/s Apr. 11, gage height, 29.64 ft; minimum, 146 ft^3/s Sept. 12, gage height, 5.40 ft; minimum daily, 169 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1310	538	1420	1120	1240	2780	6040	3450	2360	1760	451	952
2	1530	871	1740	633	3140	2780	3680	2660	2550	2440	670	957
3	437	1020	1680	749	6860	2330	22400	3460	2310	775	1010	1160
4	465	1200	1660	1730	8220	1450	15600	2810	1960	811	1000	320
5	1110	1550	816	1370	6140	1860	8930	2750	1870	726	1300	193
6	928	1540	943	1220	1030	954	7540	2530	1950	2030	1400	441
7	937	575	1320	1280	1130	2510	4660	2270	2040	1710	381	961
8	983	762	1260	1240	3570	4740	11400	2150	2110	1600	252	885
9	948	1120	1310	648	2650	4770	8690	2400	2160	1170	995	1050
10	430	896	1420	744	2310	6560	26400	2420	1690	529	1020	1070
11	484	1050	1240	1270	2800	5260	35200	2550	1790	503	1030	278
12	1030	1010	685	1350	6090	6400	20900	2450	764	1120	999	169
13	1070	2070	958	1160	3000	3270	11600	2470	821	1170	1210	951
14	1340	841	1350	1190	1550	1000	10400	2170	1470	1670	351	993
15	1360	766	1320	1190	3860	899	8460	2130	2110	563	239	1010
16	1200	1180	4330	575	2840	843	7800	2560	2120	542	1150	1000
17	448	1150	6690	740	2170	797	3280	2780	1660	518	1020	649
18	517	1140	6060	1210	3980	7880	4440	3250	1850	505	971	345
19	1140	1200	2890	1070	5410	20300	7500	2990	850	959	978	297
20	1070	1450	3970	1070	3930	19700	5150	2480	854	968	975	958
21	1040	568	3670	1130	2080	13600	4280	2480	2440	872	307	960
22	1000	618	2380	1090	5570	9230	4030	4230	2790	1200	184	956
23	742	1710	2160	763	7440	8330	4470	3820	2040	1510	1180	779
24	433	1740	2090	1500	7970	5120	16900	3820	1960	476	1090	780
25	664	1250	1530	3290	8070	3880	16800	3850	1810	718	1170	347
26	1480	481	762	2070	5200	3280	13100	3670	643	1150	995	300
27	1300	479	902	1280	1090	1290	8060	3070	595	1070	710	935
28	1100	638	1800	1320	1240	5090	5100	2460	2370	1060	306	936
29	1030	635	2030	1170	---	7280	5060	2060	1630	1040	270	950
30	1270	1940	1350	696	---	4670	4590	2260	1820	1200	1080	994
31	486	---	1460	781	---	5080	---	2360	---	465	1040	---
TOTAL	29282	31988	63196	36645	112580	163933	312460	86810	53387	32830	25734	22576
MEAN	945	1066	2039	1182	4021	5288	10420	2800	1780	1059	830	753
MAX	1530	2070	6690	3290	8860	20300	35200	4230	2790	2440	1400	1160
MIN	430	479	685	575	1030	797	3280	2060	595	465	184	169
(*)	-72	+212	+217	+84	-87	-11	+70	+44	+8	-212	-443	-496
MEAN*	873	1278	2256	1266	3934	5277	10490	2844	1788	847	387	257
CFSM*	.36	.53	.93	.52	1.63	2.19	4.34	1.18	.74	.35	.16	.11
IN*	.42	.59	1.08	.60	1.70	2.52	4.85	1.36	.83	.40	.18	.12

CAL YR 1982 TOTAL 741935 MEAN 2033 MAX 21000 MIN 356 MEAN* 2057 CFSM* .85 IN* 11.57
WTR YR 1983 TOTAL 971425 MEAN 2661 MAX 35200 MIN 169 MEAN* 2604 CFSM* 1.08 IN* 14.64

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville lakes; furnished by Appalachian Power Co.

* Adjusted for change in contents.

02064000 FALLING RIVER NEAR NARUNA, VA

LOCATION.--Lat 37°07'36", long 78°57'36", Campbell County, Hydrologic Unit 03010102, on left bank at upstream side of bridge on State Highway 643, 2.7 mi northeast of Naruna, and 3.2 mi upstream from Little Falling River.

DRAINAGE AREA.--173 mi^2.

PERIOD OF RECORD.--July 1929 to January 1935, September 1941 to current year.

REVISED RECORDS.--WSP 1333: 1930, 1931-34(M), 1935. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 412.32 ft National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good. Small diurnal fluctuation at times during low flow, cause unknown. Prior to 1958, diurnal fluctuation caused by gristmill at Spring Mills. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--47 years (water years 1930-34, 1942-83), 147 ft^3/s, 11.54 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,600 ft^3/s June 22, 1972, gage height, 29.21 ft, from rating curve extended above 6,100 ft^3/s on basis of slope-area measurement of peak flow; minimum, 3.0 ft^3/s Oct. 9, 1932, gage height, 2.18 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 26.5 ft, from floodmarks, discharge, 22,000 ft^3/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 19	0545	3020	10.73	Apr. 10	0700	4540	13.69
Apr. 3	0330	*4600	13.78	Apr. 15	2115	2550	9.66

Minimum discharge, 16 ft^3/s Sept. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	50	87	75	68	191	204	165	113	119	37	31
2	39	49	96	76	218	215	443	158	112	364	40	31
3	39	48	82	89	331	166	2450	154	107	125	41	32
4	38	61	76	155	170	146	489	186	114	98	38	30
5	39	102	72	82	125	132	289	156	114	160	38	32
6	39	69	74	78	121	155	249	141	113	116	36	28
7	39	58	66	75	124	267	372	135	124	90	34	25
8	39	55	61	72	145	428	449	135	117	81	32	23
9	45	53	59	71	129	347	606	144	107	76	29	23
10	48	52	57	72	121	229	3110	129	105	70	29	19
11	47	51	60	76	120	224	640	122	105	67	29	17
12	45	53	90	72	115	181	354	118	102	65	41	18
13	87	237	96	70	125	151	266	116	99	60	40	21
14	124	128	88	66	140	136	228	122	100	58	33	38
15	62	88	87	66	243	128	946	137	112	55	31	40
16	48	71	914	65	295	120	921	138	110	53	29	32
17	42	64	364	63	431	114	387	159	102	51	28	30
18	42	62	191	57	560	249	286	125	98	49	28	29
19	43	60	145	54	378	1610	249	119	114	47	28	28
20	43	59	126	60	284	414	211	147	183	47	26	26
21	44	59	112	62	231	619	189	198	225	46	24	28
22	43	58	98	73	207	333	176	643	140	46	23	32
23	42	58	92	142	260	221	184	498	121	50	24	31
24	42	57	91	139	246	184	1280	231	106	74	44	30
25	93	53	89	108	228	164	482	171	99	62	35	29
26	143	53	89	93	254	144	287	149	93	55	30	30
27	80	56	86	85	188	356	230	133	89	50	28	29
28	61	62	81	80	165	774	203	122	91	45	27	28
29	55	106	82	75	---	319	184	122	123	41	50	27
30	52	98	79	74	---	224	173	132	122	39	42	32
31	51	---	76	71	---	218	---	120	---	36	33	---
TOTAL	1694	2130	3866	2496	6022	9159	16537	5325	3460	2395	1027	849
MEAN	54.6	71.0	125	80.5	215	295	551	172	115	77.3	33.1	28.3
MAX	143	237	914	155	560	1610	3110	643	225	364	50	40
MIN	38	48	57	54	68	114	173	116	89	36	23	17
CFSM	.32	.41	.72	.47	1.24	1.71	3.19	.99	.67	.45	.19	.16
IN.	.36	.46	.83	.54	1.29	1.97	3.56	1.15	.74	.51	.22	.18

CAL YR 1982 TOTAL 51622 MEAN 141 MAX 3030 MIN 32 CFSM .82 IN 11.10
WTR YR 1983 TOTAL 54960 MEAN 151 MAX 3110 MIN 17 CFSM .87 IN 11.82

02065500 CUB CREEK AT PHENIX, VA

LOCATION.--Lat 37°04'45", long 78°45'50", Charlotte County, Hydrologic Unit 03010102, on right bank 10 ft upstream from bridge on State Highway 40, 0.9 mi west of Phenix, 1.9 mi downstream from Rough Creek, and 6.4 mi upstream from Louse Creek.

DRAINAGE AREA.--98.0 mi².

PERIOD OF RECORD.--August 1946 to current year.

REVISED RECORDS.--WSP 1333: 1947(M), 1948, 1949(M). WSP 2104: Drainage area. WDR VA-76-1: 1975.

GAGE.--Water-stage recorder. Datum of gage is 370.19 ft National Geodetic Vertical Datum of 1929. Prior to July 14, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--37 years, 96.8 ft³/s, 13.41 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,380 ft³/s June 22, 1972, gage height, 20.37 ft, from floodmark in gage house, from rating curve extended above 2,700 ft³/s; minimum, 2.6 ft³/s Oct. 6, 1970, gage height, 0.74 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1940 reached a stage of 17.5 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 17	1130	1030	7.14	Apr. 16	1330	1390	8.21
Mar. 28	1830	1040	7.20	Apr. 25	0100	1470	8.40
Apr. 3	2130	1630	8.80	May 23	0930	1320	8.03
Apr. 10	2000	*1900	9.37				

Minimum discharge, 15 ft³/s Sept. 12-13, gage height, 1.30 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	38	90	55	46	113	160	108	90	61	27	27
2	28	37	101	53	99	142	149	103	87	91	34	25
3	28	37	79	64	306	109	780	100	81	83	33	25
4	27	87	69	63	246	91	785	145	82	66	31	24
5	27	208	63	57	101	83	239	115	83	150	30	26
6	27	87	63	61	88	97	163	95	77	70	27	26
7	28	61	59	57	93	226	176	87	102	62	27	21
8	27	52	52	52	109	194	254	85	89	54	27	20
9	29	47	50	50	95	180	237	84	76	49	25	17
10	35	46	48	50	87	131	1110	78	70	45	23	17
11	36	44	49	55	84	113	947	76	67	43	23	16
12	33	44	72	51	82	103	317	73	64	42	24	16
13	51	185	79	46	80	88	179	71	61	39	27	16
14	100	162	59	45	90	81	145	70	59	38	25	27
15	47	87	65	46	135	76	240	77	63	36	25	32
16	35	68	251	45	174	72	975	115	60	34	24	23
17	30	59	747	43	219	69	481	228	57	33	23	22
18	30	55	333	42	303	132	215	102	59	32	23	21
19	30	51	125	40	306	491	173	82	181	31	24	20
20	30	50	103	41	211	577	144	101	105	30	23	19
21	31	49	94	45	159	278	126	109	81	30	22	19
22	31	48	81	51	134	237	117	445	75	29	20	23
23	30	47	72	91	152	135	117	991	71	32	25	22
24	30	46	69	89	170	111	619	377	61	44	48	20
25	82	43	65	70	144	99	927	158	57	43	38	20
26	174	41	61	59	197	88	293	127	52	39	32	20
27	80	45	60	55	137	152	172	112	50	34	29	20
28	50	53	58	51	108	752	142	101	50	31	27	20
29	43	100	64	49	---	569	124	99	55	28	51	19
30	39	10[illegible]	61	48	---	202	114	101	58	27	45	21
31	38	---	56	48	---	162	---	97	---	25	29	---
TOTAL	1334	2084	3298	1672	4155	5953	10620	4712	2223	1451	891	644
MEAN	43.0	69.5	106	53.9	148	192	354	152	74.1	46.8	28.7	21.5
MAX	174	208	747	91	306	752	1110	991	181	150	51	32
MIN	27	37	48	40	46	69	114	70	50	25	20	16
CFSM	.44	.71	1.08	.55	1.51	1.96	3.61	1.55	.76	.48	.29	.22
IN.	.51	.79	1.25	.63	1.58	2.26	4.03	1.79	.84	.55	.34	.24

CAL YR 1982 TOTAL 34073 MEAN 93.4 MAX 2230 MIN 21 CFSM .95 IN 12.93
WTR YR 1983 TOTAL 39037 MEAN 107 MAX 1110 MIN 16 CFSM 1.09 IN 14.82

02066000 ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA

LOCATION.--Lat 36°54'54", long 78°44'28", Halifax County, Hydrologic Unit 03010102, on right bank 14 ft downstream from bridge on State Highway 746, 2.8 mi northwest of Randolph, 3.6 mi upstream from Roanoke Creek, and at mile 227.3.

DRAINAGE AREA.--2,977 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1900 to September 1906, October 1927 to September 1930, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1303. Prior to October 1902, published as Staunton River at Randolph. Gage heights collected since 1905 at this site or at former site are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1203: 1928-30. WSP 1303: 1901-6. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 307.59 ft National Geodetic Vertical Datum of 1929. Aug. 27, 1900, to Oct. 13, 1902, nonrecording gage at site 3.2 mi downstream at datum about 5.9 ft lower. Oct. 14, 1902, to Aug. 11, 1906, and Oct. 1, 1927, to Mar. 31, 1930, nonrecording gage at site of original gage at datum 3.93 ft lower than present datum.

REMARKS.--Records good prior to July 23 and fair thereafter. Flow regulated since 1962 by Leesville Lake (station 02059400) 68.7 mi upstream and since 1963 by Smith Mountain Lake (station 02057400) 86.7 mi upstream. Gage-height and Corps of Engineers satellite telemeters at station.

AVERAGE DISCHARGE.--42 years, 3,052 ft^3/s, 13.92 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,000 ft^3/s Dec. 31, 1901, gage height, 35.0 ft, from graph based on gage readings, site and datum then in use; minimum daily, 179 ft^3/s Sept. 8, 1965, July 7, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 16, 1940, reached a stage of 41.6 ft, present site and datum, discharge, 150,000 ft^3/s, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36,800 ft^3/s Apr. 12, gage height, 26.58 ft; minimum daily, 280 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1430	698	2360	1790	1560	2870	7160	4870	2520	2060	600	1090
2	1760	1010	2100	1180	2270	3700	4830	2860	2800	2890	590	1050
3	985	1260	2190	1110	8590	3160	13600	4120	2730	1690	940	1200
4	593	1460	2430	1780	9550	2450	23000	3400	2360	1110	1100	470
5	1010	2230	1320	2320	7960	2110	15100	3420	2130	1210	1300	300
6	1190	2070	1250	1810	2530	1880	9660	3180	2040	2210	1400	480
7	1130	1410	1670	1740	1480	2510	5380	2910	2310	2120	900	680
8	1170	871	1640	1850	3690	5900	9470	2500	2350	1870	480	960
9	1160	1440	1550	1190	3290	5960	11400	2460	2520	1460	680	1050
10	893	1250	1670	1020	2860	6980	16400	2670	2290	1030	1100	1100
11	615	1290	1710	1510	2430	5890	31400	2850	1970	735	1110	860
12	972	1340	1190	1820	6620	7250	33800	2710	1200	1030	1100	280
13	1350	2590	1130	1650	3800	4720	21800	2700	939	1340	1250	498
14	1750	2440	1660	1530	2260	2020	12400	2690	1560	1790	980	1000
15	1850	1380	1650	1700	4360	1390	11700	2350	1670	1170	420	1020
16	1540	1600	4750	1100	4120	1280	16100	2410	2760	745	740	1010
17	966	1560	10500	908	3730	1180	8380	3090	1790	721	1150	1000
18	603	1500	9170	1530	4500	3880	5340	3600	2080	692	1100	700
19	1080	1500	5040	1430	7070	15700	8600	3460	1680	842	1050	416
20	1380	1770	4220	1440	5730	22000	6850	2820	1260	1150	1000	700
21	1270	1120	4650	1480	2930	19400	5670	2940	2450	1070	710	1000
22	1270	851	3290	1560	4630	13800	4900	3480	3100	1270	300	960
23	987	1480	2730	1340	8040	9300	4990	9000	2610	1660	880	920
24	777	2100	2610	1510	7920	7170	12200	6260	2270	1240	1200	930
25	867	2050	2650	3860	8170	4840	21400	4840	2070	637	1250	450
26	2080	982	1410	2750	8060	4370	17500	4280	1270	1190	1000	430
27	2090	732	1240	2180	26[illegible]	2250	12500	3730	855	1150	800	800
28	1590	752	2000	1750	1680	6710	6830	3190	2120	1130	440	940
29	1390	1080	2500	1760	---	10300	5870	2480	1880	1180	380	960
30	1280	1860	2340	1200	---	6390	5660	2330	2210	1250	920	1000
31	1230	---	2010	1070	---	5310	---	2580	---	1050	1120	---
TOTAL	38258	43676	86630	50868	132490	192670	369890	106180	61794	40692	27990	24254
MEAN	1234	1456	2795	1641	4732	6215	12330	3425	2060	1313	903	808
MAX	2090	2590	10500	3860	9550	22000	33800	9000	3100	2890	1400	1200
MIN	593	698	1130	908	1480	1180	4830	2330	855	637	300	280
(*)	-72	+212	+217	+84	-87	-11	+70	+44	+8	-212	-443	-496
MEAN‡	1162	1668	3012	1725	4645	6204	12400	3469	2068	1101	460	312
CFSM‡	.39	.56	1.01	.58	1.56	2.08	4.17	1.17	.69	.37	.15	.10
IN‡	.45	.63	1.17	.67	1.63	2.40	4.65	1.34	.78	.43	.18	.12

CAL YR 1982 TOTAL 933950 MEAN 255[illegible] MAX 21700 MIN 480 MEAN‡ 2583 CFSM‡ .87 IN‡ 11.78
WTR YR 1983 TOTAL 1175392 MEAN 3220 MAX 33800 MIN 280 MEAN‡ 3163 CFSM‡ 1.06 IN‡ 14.43

* Change in contents, equivalent in cubic feet per second, in Smith Mountain and Leesville Lakes, furnished by Appalachian Power Co.

‡ Adjusted for change in contents.

02066000 ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930, 1951 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1950 to September 1956, April 1968 to September 1982.
WATER TEMPERATURES: October 1950 to September 1956, April 1968 to September 1982.
SUSPENDED-SEDIMENT DISCHARGE: January 1954 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
NOV												
03...	1000	857	133	7.7	15.0	15	--	49	3	12	4.7	5.6
DEC												
13...	1340	1140	118	7.6	3.0	16	--	43	1	10	4.4	6.4
JAN												
17...	1545	903	112	7.4	3.0	10	--	46	2	11	4.5	6.5
MAR												
14...	1330	1740	123	7.5	10.0	15	11.0	42	3	9.9	4.2	5.2
APR												
25...	1025	21900	99	7.2	10.0	90	--	37	6	9.1	3.5	4.1
JUN												
01...	0820	2570	125	7.4	20.0	18	8.4	49	6	12	4.7	5.2
27...	1515	840	137	7.4	27.0	15	--	49	2	12	4.6	6.0
AUG												
08...	1500	486	142	7.6	29.0	20	--	57	4	14	5.4	6.4
SEP												
19...	1415	416	158	7.7	23.0	3	--	58	3	14	5.7	7.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
NOV												
03...	2.2	46	10	6.0	.10	9.9	74	78	<.010	<.10	<.010	130
DEC												
13...	1.7	42	8.0	5.8	.10	11	69	74	.010	.19	.010	240
JAN												
17...	1.9	44	9.0	6.4	.10	11	79	77	<.010	.28	<.010	200
MAR												
14...	1.7	39	10	6.3	.10	9.7	75	72	.020	.29	.010	120
APR												
25...	1.6	31	11	4.8	<.10	6.7	61	60	<.010	.31	.020	140
JUN												
01...	1.7	43	10	6.5	.20	9.5	91	76	--	--	--	81
27...	1.9	47	10	6.7	.10	11	93	81	<.010	.27	.010	130
AUG												
08...	2.2	53	9.6	6.8	.10	10	90	88	.010	.28	.010	99
SEP												
19...	2.1	56	11	7.5	.10	9.1	86	90	<.010	<.10	.020	92

< Actual value is known to be less than the value shown.

02067800; 02067820 TALBOTT AND TOWNES RESERVOIRS NEAR KIBLER, VA

LOCATION.--Talbott Dam: Lat 36°40'39", long 80°23'52", Patrick County, Hydrologic Unit 03010103, on Dan River 4.5 mi northeast of Kibler. Townes Dam: Lat 36°41'10", long 80°25'50", Patrick County, Hydrologic Unit 03010103, on Dan River about 4 mi north of Kibler.

DRAINAGE AREA.--Talbott Dam, 20.2 mi^2; Townes Dam, 32.9 mi^2.

PERIOD OF RECORD.--February 1939 to December 1945, January 1948 to September 1960 (published in WSP 1723), and October 1960 to current year.

REMARKS.--The two reservoirs are operated as a unit for storage of water for Pinnacles hydroelectric plant. Total capacity of Talbott Reservoir, 8,035 acre-ft, and Townes Reservoir, 1,377 acre-ft. Storage began in Talbott Reservoir on Feb. 13, 1939, and in Townes Reservoir several months earlier.

COOPERATION.--Records furnished by city of Danville.

COMBINED MONTHEND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	6880	
Oct. 31	7020	+140
Nov. 30	7690	+670
Dec. 31	7620	-70
CAL YR 1982		+1420
Jan. 31	7580	-40
Feb. 28	7770	+190
Mar. 31	7840	+70
Apr. 30	8480	+640
May 31	7370	-1110
June 30	7690	+320
July 31	6950	-740
Aug. 31	6300	-650
Sept. 30	5500	-800
WTR YR 1983		-1380

02068500 DAN RIVER NEAR FRANCISCO, NC

LOCATION.--Lat 36°30'53", long 80°18'11", Stokes County, Hydrologic Unit 03010103, on left bank 200 ft upstream from bridge on State Highway 704, 700 ft downstream from remains of Georges Mill, 0.2 mi downstream from Elk Creek, 3 mi east of Francisco, and 7.9 mi downstream from Little Dan River.

DRAINAGE AREA.--129 mi².

PERIOD OF RECORD.--August 1924 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1303: 1938-50 (monthly runoff). WSP 1433: 1925-26, 1928-29, 1931, 1942, 1948. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 831.99 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1929, nonrecording gage at same site and datum.

REMARKS.--Records good. Since 1938, considerable diurnal fluctuation and regulation by Talbott Reservoir (station 02067800) and Townes Reservoir (station 02067820) and Pinnacles hydroelectric plant in Virginia, 28 mi above station. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--59 years, 191 ft³/s, 20.11 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft³/s Sept. 22, 1979, gage height, 18.11 ft, from rating curve extended above 8,400 ft³/s on basis of slope-area measurement of peak flow; minimum, 7.1 ft³/s Sept. 8, 1932, gage height, 0.43 ft; minimum daily, 27 ft³/s Aug. 24, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1916 reached a stage of about 15 ft, from information by local residents, discharge, 16,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 10	0430	*7660	9.43	June 19	2200	2070	4.64
Apr. 15	1430	2010	4.57				

Minimum discharge, 61 ft³/s Sept. 19, gage height, 1.25 ft; minimum daily, 64 ft³/s Sept. 11, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	86	141	138	144	164	298	399	223	327	99	70
2	78	85	140	163	617	172	478	392	190	280	135	133
3	76	86	160	160	445	159	771	395	199	221	129	83
4	76	457	164	156	309	180	488	418	326	173	152	73
5	90	355	157	158	263	173	397	372	305	343	139	73
6	88	135	143	145	234	230	383	348	270	288	154	140
7	105	115	191	131	224	319	364	310	287	241	122	131
8	81	106	190	129	229	369	472	311	274	233	92	102
9	93	101	186	126	242	344	1150	308	262	200	152	67
10	103	98	168	129	207	386	4170	299	232	187	131	66
11	92	100	142	159	236	359	1140	224	204	204	88	64
12	86	109	166	125	222	309	693	178	216	157	156	64
13	126	443	177	149	162	272	549	187	192	172	90	73
14	120	193	188	153	200	241	490	216	179	182	87	80
15	92	153	172	124	290	204	842	230	162	149	86	74
16	84	194	843	119	270	169	709	264	167	155	83	71
17	82	176	457	138	264	192	533	264	189	161	83	71
18	82	148	340	166	270	498	494	252	189	105	81	69
19	82	107	241	177	244	484	464	260	343	136	81	67
20	82	104	221	193	249	413	437	325	563	138	123	68
21	83	104	212	201	223	399	420	566	326	169	131	77
22	81	101	174	203	197	330	403	528	275	174	98	90
23	80	112	153	183	294	322	466	450	269	174	120	73
24	80	97	140	151	323	316	949	369	250	154	114	72
25	140	98	166	128	277	253	544	338	218	142	83	71
26	150	94	136	120	261	193	486	313	217	129	80	72
27	98	97	133	117	220	345	448	282	227	122	76	71
28	91	104	140	115	164	359	429	270	248	119	76	70
29	88	157	147	112	---	356	414	275	242	107	75	68
30	87	169	168	111	---	302	406	291	234	125	71	69
31	86	---	160	111	---	382	---	269	---	132	71	---
TOTAL	2862	4484	6316	4490	7280	9194	20287	9903	7478	5599	3258	2372
MEAN	92.3	149	204	145	260	297	676	319	249	181	105	79.1
MAX	150	457	843	203	617	498	4170	566	563	343	156	140
MIN	76	85	133	111	144	159	298	178	162	105	71	64
(*)	+2	+11	-1	-1	+3	+1	+11	-18	+5	-12	-11	-13

CAL YR 1982 TOTAL 71015 MEAN 195 MAX 2220 MIN 76 MEAN‡ 197 CFSM‡ 1.53 IN‡ 20.77
WTR YR 1983 TOTAL 83523 MEAN 229 MAX 4170 MIN 64 MEAN‡ 227 CFSM‡ 1.76 IN‡ 23.89

* Change in contents, equivalent in cubic feet per second, in Talbott and Townes Reservoirs; furnished by city of Danville, Va.

‡ Adjusted for change in contents.

02069700 SOUTH MAYO RIVER NEAR NETTLERIDGE, VA

LOCATION.--Lat 36°34'15", long 80°07'47", Patrick County, Hydrologic Unit 03010103, on right bank 60 ft downstream from bridge on State Highway 700, 1.2 mi southeast of Nettleridge, 1.4 mi downstream from Russell Creek, and 3.6 mi upstream from Spoon Creek.

DRAINAGE AREA.--84.6 mi².

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WSP 2104: Drainage area. WDR VA-74-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 871.60 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 9, 1964, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--21 years, 125 ft³/s, 20.07 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s Sept. 22, 1979, gage height, 22.00 ft, from rating curve extended above 2,900 ft³/s on basis of contracted-opening measurements at gage heights 18.32 ft and 22.00 ft; minimum, 20 ft³/s Aug. 29, 30, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0900	1350	7.21	Apr. 10	0400	*3020	10.45
Apr. 2	2130	1340	7.20				

Minimum discharge, 30 ft³/s Sept. 12, gage height, 3.03 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	50	95	69	69	126	174	222	148	162	63	41
2	46	50	91	72	428	116	408	214	142	151	66	42
3	44	51	91	89	280	110	751	214	143	135	61	45
4	44	322	88	76	161	106	370	220	218	116	68	41
5	48	172	87	72	126	103	268	198	156	151	62	41
6	49	104	102	71	121	148	238	188	150	118	62	39
7	46	86	94	69	111	200	232	180	182	102	59	36
8	50	77	87	68	103	295	258	180	166	96	58	35
9	57	72	83	67	99	265	472	182	140	94	56	35
10	58	71	80	69	100	208	1730	172	132	92	54	34
11	57	68	80	70	98	186	670	169	124	92	56	33
12	54	74	112	66	94	166	435	164	119	86	72	36
13	86	282	90	62	92	153	321	161	116	82	59	52
14	83	122	83	62	125	143	279	161	113	80	59	58
15	58	100	86	63	164	137	482	158	135	79	58	49
16	53	88	721	62	164	129	391	170	114	75	58	44
17	49	83	258	61	212	129	294	158	111	73	58	44
18	49	82	159	61	245	546	273	148	110	71	55	41
19	50	78	134	58	200	521	248	151	124	69	57	40
20	50	77	114	55	188	265	225	212	164	69	54	41
21	51	81	103	67	175	228	208	288	153	67	52	54
22	51	77	93	75	170	192	200	310	142	64	53	60
23	52	75	86	122	216	172	258	238	114	76	52	45
24	53	72	82	111	192	164	842	194	102	73	57	44
25	116	69	80	86	169	154	439	174	99	79	60	43
26	100	68	79	80	146	146	324	164	94	70	54	43
27	65	69	75	78	134	284	288	154	92	65	52	42
28	59	75	76	75	126	271	260	154	93	63	51	41
29	55	120	79	73	---	200	245	154	160	61	47	39
30	53	98	73	74	---	177	230	170	154	60	44	39
31	51	---	71	71	---	188	---	154	---	58	43	---
TOTAL	1784	2913	3632	2254	4508	6228	11813	5776	4010	2729	1760	1277
MEAN	57.5	97.1	117	72.7	161	201	394	186	134	88.0	56.8	42.6
MAX	116	322	721	122	428	546	1730	310	218	162	72	60
MIN	44	50	71	55	69	103	174	148	92	58	43	33
CFSM	.68	1.15	1.38	.86	1.90	2.38	4.66	2.20	1.58	1.04	.67	.50
IN.	.78	1.28	1.60	.99	1.98	2.74	5.19	2.54	1.76	1.20	.77	.56

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CAL YR 1982  TOTAL  41160   MEAN 113   MAX  1250   MIN 38   CFSM 1.34   IN 18.10
WTR YR 1983  TOTAL  48684   MEAN 133   MAX  1730   MIN 33   CFSM 1.57   IN 21.41
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02070000 NORTH MAYO RIVER NEAR SPENCER, VA

LOCATION.--Lat 36°34'05", long 79°59'15", Henry County, Hydrologic Unit 03010103, on left bank 800 ft downstream from bridge on State Highway 629 at Moores Mill, 2.1 mi downstream from Horse Pasture Creek, and 3.8 mi southeast of Spencer.

DRAINAGE AREA.--108 mi².

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1303: 1929-32(M), 1934(M).

GAGE.--Water-stage recorder. Datum of gage is 730.94 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Jan. 23, 1936, nonrecording gage at site 800 ft upstream at datum 1.50 ft higher. July 25 to Sept. 27, 1936, nonrecording gage at present site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--55 years, 126 ft³/s, 15.84 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,200 ft³/s Oct. 9, 1947, gage height, 15.80 ft, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement at gage height 13.41 ft and velocity-area study; minimum, 14 ft³/s Aug. 11, 1956; minimum gage height, 1.08 ft Oct. 8, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Mar. 19	0200	1610	5.00	Apr. 10	1000	*3210	7.17
Apr. 3	0500	1430	4.70	Apr. 24	0730	1510	4.83

Minimum discharge, 28 ft³/s Sept. 12, gage height, 1.22 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	50	78	64	71	100	168	177	113	202	53	36
2	41	49	74	66	354	94	320	171	113	165	61	36
3	40	49	69	78	315	87	858	168	109	117	57	40
4	40	89	71	71	134	83	300	177	224	102	61	38
5	41	150	68	69	100	81	224	156	151	119	74	37
6	44	78	74	66	96	135	205	145	124	100	58	35
7	43	64	68	66	92	224	202	142	124	88	100	32
8	44	60	63	64	87	248	324	145	121	83	68	32
9	49	58	61	63	83	304	387	156	111	81	58	30
10	52	55	58	66	85	205	2270	134	105	79	53	30
11	53	54	60	68	78	177	512	132	100	81	54	29
12	49	59	85	63	85	134	314	128	96	78	66	29
13	60	175	81	60	90	121	263	128	94	76	57	42
14	85	100	72	60	92	111	237	128	94	74	52	58
15	55	78	71	61	154	105	314	126	174	72	52	53
16	49	68	695	58	165	98	342	130	102	71	50	44
17	45	64	273	57	205	98	246	130	94	68	49	43
18	45	64	145	56	293	596	224	121	90	66	48	41
19	45	63	115	54	224	931	221	121	94	64	49	40
20	45	61	100	52	195	290	195	156	140	63	44	40
21	46	64	90	88	168	250	183	168	148	61	43	45
22	45	61	83	98	162	195	174	302	188	58	42	50
23	44	60	79	148	230	168	202	195	115	63	42	44
24	45	58	76	192	183	151	1010	145	100	72	42	42
25	80	54	74	121	142	140	361	128	92	72	50	42
26	121	54	71	102	117	128	256	137	88	66	48	42
27	68	54	69	92	107	315	224	148	87	61	44	42
28	57	58	69	85	100	385	205	124	85	57	44	41
29	54	92	71	81	---	211	192	121	176	55	42	38
30	52	83	68	78	---	171	183	132	276	54	38	37
31	50	---	66	74	---	177	---	121	---	52	37	---
TOTAL	1629	2126	3197	2421	4207	6513	11116	4592	3728	2520	1636	1188
MEAN	52.5	70.9	103	78.1	150	210	371	148	124	81.3	52.8	39.6
MAX	121	175	695	192	354	931	2270	302	276	202	100	58
MIN	40	49	58	52	71	81	168	121	85	52	37	29
CFSM	.49	.66	.95	.72	1.39	1.94	3.44	1.37	1.15	.75	.49	.37
IN.	.56	.73	1.10	.83	1.45	2.24	3.83	1.58	1.28	.87	.56	.41

CAL YR 1982 TOTAL 36132 MEAN 99.0 MAX 695 MIN 29 CFSM .92 IN 12.45
WTR YR 1983 TOTAL 44873 MEAN 123 MAX 2270 MIN 29 CFSM 1.14 IN 15.46

02071900 PHILPOTT LAKE NEAR PHILPOTT, VA

LOCATION.--Lat 36°46'52", long 80°01'40", Henry County, Hydrologic Unit 03010103, at Philpott Dam on Smith River, 1.5 mi west of Philpott, 12.0 mi upstream from Reed Creek, and at mile 44.3.

DRAINAGE AREA.--216 mi².

PERIOD OF RECORD.--August 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by concrete dam. Spillway, with crest at elevation 985 ft, is ungated and 120 ft long. Storage began in August 1950 during construction; initial filling started in December 1951; water in reservoir first reached rule-curve elevation in July 1953. Total capacity at maximum flood-control pool elevation, 998 ft, is 247,400 acre-ft of which 47,000 acre-ft is above the spillway crest; 34,200 acre-ft is controlled flood storage between elevations 974 ft, maximum power pool, and 985 ft; 57,800 acre-ft is available for power between elevations 951 ft, minimum power pool, and 974 ft; and 108,400 acre-ft is inactive and dead storage below elevation 951 ft. Usable capacity is 92,000 acre-ft between elevations 951 ft and 985 ft. Figures given herein represent total contents. Reservoir is used for flood control, hydroelectric power, low-water regulation for pollution abatement and industrial water supply, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 191,700 acre-ft June 22, 1972, elevation, 983.06 ft; minimum (after first filling to rule curve), 64,540 acre-ft Sept. 26, 1956, elevation, 927.59 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 188,330 acre-ft Apr. 11, elevation, 981.29 ft; minimum, 138,980 acre-ft Sept. 30, elevation, 964.04 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	968.56	150900	
Oct. 31	967.64	148420	-2480
Nov. 30	969.65	153880	+5460
Dec. 31	971.25	158330	+4450
CAL YR 1982			+33670
Jan. 31	971.62	159370	+1040
Feb. 28	973.29	164140	+4770
Mar. 31	975.15	169550	+5410
Apr. 30	975.49	170560	+1010
May 31	974.32	167120	-3440
June 30	973.97	166100	-1020
July 31	972.85	162870	-3230
Aug. 31	970.09	155090	-7780
Sept. 30	964.04	138980	-16110
WTR YR 1983			-11920

02072000 SMITH RIVER NEAR PHILPOTT, VA

LOCATION.--Lat 36°46'50", long 80°01'30", Franklin County, Hydrologic Unit 03010103, on left bank 900 ft downstream from Philpott Dam, 3.1 mi west of Philpott, 11.6 mi upstream from Reed Creek, and at mile 44.1.

DRAINAGE AREA.--216 mi^2.

PERIOD OF RECORD.--August 1946 to current year.

REVISED RECORDS.--WSP 1553: 1953(M), 1955-56(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 804.27 ft National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 8, 1952, at site 1.9 mi downstream at different datum.

REMARKS.--Records good. Since August 1950, flow regulated by Philpott Lake (station 02071900) 0.2 mi upstream. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--37 years, 278 ft^3/s, 17.48 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft^3/s June 29, 1949, gage height, 20.3 ft, site and datum then in use, from rating curve extended above 9,700 ft^3/s on basis of slope-area measurements at gage heights 18.2 ft and 20.3 ft; minimum, 4.0 ft^3/s Aug. 12, 1953, gage height, 1.50 ft; minimum daily, 24 ft^3/s Dec. 16, 17, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,730 ft^3/s Apr. 13, gage height, 7.47 ft; minimum, 10 ft^3/s part of each day Oct. 19-22, 26-29, gage height, 1.86 ft; minimum daily, 34 ft^3/s May 14, 15, 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	97	92	44	193	486	618	638	439	398	287	292
2	47	77	95	44	195	489	45	612	439	47	312	289
3	47	109	96	187	191	488	44	615	423	47	317	46
4	151	97	47	192	190	492	923	632	46	391	309	46
5	151	97	47	193	44	45	1280	628	46	390	299	441
6	147	47	94	192	44	45	1300	631	387	384	47	444
7	151	47	95	192	628	193	1370	46	389	390	47	447
8	146	150	96	44	661	192	1340	624	370	385	290	470
9	46	46	96	44	635	193	1240	649	391	47	296	448
10	47	97	97	192	643	191	864	627	395	47	291	46
11	204	96	46	192	657	191	2520	625	46	290	290	46
12	203	95	46	193	45	45	3620	614	46	290	281	476
13	193	46	98	193	44	46	3640	627	339	295	47	463
14	194	46	95	193	430	586	2340	34	343	298	47	446
15	199	96	87	45	424	586	1290	34	345	299	284	467
16	46	93	91	46	420	580	1220	446	342	47	294	476
17	46	93	89	195	444	580	586	431	343	47	294	47
18	197	93	46	194	437	588	955	434	47	303	301	47
19	204	93	46	194	44	46	951	441	48	303	309	470
20	180	46	552	195	44	45	921	439	246	306	46	463
21	191	46	540	194	400	788	922	34	248	306	46	440
22	191	92	544	46	609	788	925	34	659	302	278	447
23	42	96	547	45	480	781	632	543	637	47	290	457
24	42	97	551	193	490	816	45	544	629	47	291	46
25	192	97	46	192	472	777	956	552	49	285	312	46
26	191	92	46	191	44	45	1300	550	49	277	303	460
27	197	46	194	191	44	45	1320	548	393	266	46	460
28	185	47	178	192	484	664	1350	46	259	291	46	468
29	194	97	187	45	---	640	1270	46	539	302	297	453
30	47	92	192	45	---	624	45	442	404	46	302	458
31	47	---	194	193	---	626	---	436	---	46	300	---
TOTAL	4164	2463	5270	4491	9436	12701	35832	13602	9336	7219	7199	10105
MEAN	134	82.1	170	145	337	410	1194	439	311	233	232	337
MAX	204	150	552	195	661	816	3640	649	659	398	317	476
MIN	42	46	46	44	44	45	44	34	46	46	46	46
(*)	-40	+92	+72	+17	+86	+88	+17	-56	-17	-53	-127	-217
MEAN‡	94	174	242	162	423	498	1211	383	294	180	105	66
CFSM‡	.44	.81	1.12	.75	1.96	2.31	5.61	1.77	1.36	.83	.49	.31
IN‡	.50	.90	1.29	.86	2.04	2.66	6.26	2.04	1.52	.96	.56	.34

CAL YR 1982 TOTAL 65637 MEAN 180 MAX 1290 MIN 36 MEAN‡ 227 CFSM‡ 1.05 IN‡ 14.27
WTR YR 1983 TOTAL 121818 MEAN 334 MAX 3640 MIN 34 MEAN‡ 318 CFSM‡ 1.47 IN‡ 19.99

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers
‡ Adjusted for change in contents.

02072500 SMITH RIVER AT BASSETT, VA

LOCATION.--Lat 36°46'12", long 80°00'04", Henry County, Hydrologic Unit 03010103, on left bank 25 ft upstream from bridge on State Highway 666 at north edge of North Bassett, 1.0 mi northwest of Bassett, 3.0 mi downstream from Town Creek, 5.6 mi upstream from Reed Creek, 6.2 mi downstream from Philpott Dam, and at mile 38.1.

DRAINAGE AREA.--259 mi^2.

PERIOD OF RECORD.--April 1939 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 753.09 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except those above 5,000 ft^3/s, which are poor. Since August 1950, flow regulated by Philpott Lake (station 02071900) 6.2 mi upstream. Gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 329 ft^3/s, 17.25 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft^3/s Aug. 14, 1940, gage height, 18.28 ft; minimum, 19 ft^3/s July 19, 1956; minimum daily, 44 ft^3/s Aug. 23, 1964; minimum gage height, 1.06 ft Sept. 18, 26, 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 19, 1937, reached a stage of about 22.9 ft, from information by local residents, discharge, 38,000 ft^3/s, from rating curve extended above 23,000 ft^3/s on basis of backwater studies and records for station at Martinsville.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,400 ft^3/s Apr. 9, gage height, 9.17 ft; minimum, 37 ft^3/s Aug. 23, gage height, 1.32 ft; minimum daily, 52 ft^3/s Oct. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	108	117	66	222	541	687	708	497	449	315	322
2	55	93	121	66	485	540	294	698	497	84	346	320
3	55	124	118	222	315	536	283	702	484	76	351	67
4	166	174	69	220	248	543	915	719	110	474	339	64
5	166	144	69	220	82	81	1400	704	91	506	332	472
6	161	69	118	220	83	91	1400	711	465	436	70	477
7	167	65	115	219	658	312	1490	110	463	434	68	480
8	164	166	115	65	718	292	1460	687	432	426	316	507
9	56	66	115	64	694	286	2110	722	447	80	325	481
10	60	111	116	220	708	271	1620	699	451	76	321	65
11	226	111	66	220	720	273	2550	699	79	324	323	61
12	224	114	80	218	112	97	3720	689	76	324	330	500
13	219	124	125	217	76	88	3720	697	371	328	70	507
14	221	73	119	217	487	639	2550	99	387	330	66	497
15	218	118	116	64	495	648	1490	78	400	330	321	514
16	56	114	475	63	505	641	1440	498	380	73	321	517
17	55	113	174	217	559	646	631	486	375	71	324	68
18	216	113	88	216	570	842	1080	486	74	333	329	63
19	224	112	79	214	125	243	1060	494	180	335	339	500
20	199	65	599	216	115	118	1020	503	387	334	66	560
21	209	65	588	218	480	880	1010	104	300	339	63	502
22	210	113	592	73	707	873	1010	90	762	338	313	493
23	52	115	593	114	597	862	815	602	693	75	319	502
24	54	115	599	273	578	892	567	605	679	76	324	68
25	245	114	71	243	542	855	998	609	81	322	366	63
26	234	108	68	235	91	91	1420	606	76	310	345	497
27	225	62	224	230	80	194	1440	602	425	300	69	505
28	209	66	211	227	530	823	1470	90	300	321	68	507
29	216	134	218	71	---	730	1450	85	644	333	335	493
30	60	119	220	70	---	696	207	496	457	70	335	496
31	59	---	223	223	---	704	---	496	---	68	330	---
TOTAL	4736	3188	6601	5421	11582	15328	41307	15574	11063	8375	8139	11168
MEAN	153	106	213	175	414	494	1377	502	369	270	263	372
MAX	245	174	599	273	720	892	3720	722	762	506	366	560
MIN	52	62	66	63	76	81	207	78	74	68	63	61
(*)	-40	+92	+72	+17	+86	+88	+17	-56	-17	-53	-127	-271
MEAN‡	113	198	285	192	500	582	1394	446	352	217	136	101
CFSM‡	.44	.76	1.10	.74	1.93	2.25	5.38	1.72	1.36	.84	.53	.39
IN‡	.50	.85	1.27	.85	2.01	2.59	6.01	1.99	1.52	.97	.61	.44

CAL YR 1982 TOTAL 81211 MEAN 222 MAX 2170 MIN 52 MEAN‡ 269 CFSM‡ 1.04 IN‡ 14.10
WTR YR 1983 TOTAL 142482 MEAN 390 MAX 3720 MIN 52 MEAN‡ 374 CFSM‡ 1.44 IN‡ 19.61

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.

‡ Adjusted for change in contents.

02073000 SMITH RIVER AT MARTINSVILLE, VA

LOCATION.--Lat 36°39'40", long 79°52'51", Henry County, Hydrologic Unit 03010103, on right bank at south edge of Martinsville, 800 ft downstream from bridge on U.S. Highways 58 and 220, and 5.0 mi downstream from Beaver Creek.

DRAINAGE AREA.--380 mi².

PERIOD OF RECORD.--August 1929 to current year.

REVISED RECORDS.--WSP 1032: 1933-35(M), 1936-39, 1940-41(P). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 657.22 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated since August 1950 by Philpott Lake (station 02071900) 19.6 mi upstream. Some additional regulation by powerplant 1,000 ft above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years, 454 ft³/s, 16.22 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s Oct. 19, 1937, gage height, 21.50 ft, from rating curve extended above 17,000 ft³/s on basis of computations of flow over dam at gage heights 16.76 ft and 21.50 ft; minimum, 3.8 ft³/s Mar. 19, 1955; minimum daily, 19 ft³/s Oct. 6, 1935; minimum gage height, 0.69 ft Sept. 8, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,100 ft³/s Apr. 10, gage height, 9.65 ft; minimum, 15 ft³/s Feb. 4, gage height, 1.01 ft; minimum daily, 24 ft³/s Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	201	227	165	307	665	866	711	615	612	337	383
2	24	165	214	92	1090	661	773	871	615	310	438	382
3	103	148	229	358	817	648	1180	890	615	168	435	227
4	233	255	133	305	448	645	989	919	487	527	523	60
5	221	324	82	305	149	333	1610	889	279	713	443	411
6	226	88	233	298	214	314	1560	884	575	587	252	556
7	208	117	206	348	592	685	1680	437	609	536	121	559
8	265	173	188	55	814	539	1800	667	565	538	313	594
9	55	218	179	132	805	558	2170	893	561	294	399	569
10	135	118	232	339	815	496	4650	865	563	133	396	281
11	311	140	52	294	846	497	2880	844	211	351	393	54
12	273	222	216	291	464	221	3910	835	169	416	434	435
13	386	424	243	320	201	184	3850	839	449	416	230	621
14	327	194	200	226	530	589	3100	446	529	418	99	605
15	343	227	203	136	700	768	2100	207	600	418	305	609
16	51	166	1240	126	747	758	1990	528	496	247	384	605
17	131	212	509	306	857	760	941	628	483	113	388	280
18	270	189	199	291	924	1450	1450	607	176	349	391	78
19	289	183	186	260	522	1040	1410	608	302	424	408	451
20	266	141	537	286	354	386	1360	672	810	422	229	578
21	264	96	703	337	613	920	1320	451	451	422	76	585
22	308	193	687	121	768	1040	1310	566	993	404	285	571
23	38	203	689	315	899	995	1200	641	899	252	374	568
24	103	234	691	518	797	1020	2170	769	875	203	383	254
25	450	90	325	413	727	979	1290	750	243	345	491	64
26	.08	257	150	357	374	408	1870	772	162	404	431	455
27	310	86	340	342	203	568	1860	766	416	384	227	572
28	273	114	317	377	504	1160	1870	357	392	393	92	575
29	329	270	305	86	---	947	1830	200	878	409	315	565
30	103	225	333	155	---	872	608	548	599	248	397	571
31	77	---	240	339	---	912	---	626	---	89	390	---
TOTAL	6936	5673	10288	8293	17081	22018	55597	20686	15617	11545	10379	13118
MEAN	224	189	332	268	610	710	1853	667	521	372	335	437
MAX	450	424	1240	518	1090	1450	4650	919	993	713	523	621
MIN	24	86	52	55	149	184	608	200	162	89	76	54
(*)	-40	+92	+72	+17	+86	+88	+17	-56	-17	-53	-127	-271
MEAN‡	184	281	404	285	696	798	1870	611	504	319	208	166
CFSM‡	.48	.74	1.06	.75	1.83	2.10	4.92	1.61	1.33	.84	.55	.44
IN‡	.56	.83	1.23	.86	1.91	2.42	5.49	1.85	1.48	.97	.63	.49

CAL YR 1982 TOTAL 120510 MEAN 330 MAX 1990 MIN 24 MEAN‡ 377 CFSM‡ .99 IN‡ 13.47
WTR YR 1983 TOTAL 197231 MEAN 540 MAX 4650 MIN 24 MEAN‡ 524 CFSM‡ 1.38 IN‡ 18.72

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02074000 SMITH RIVER AT EDEN, NC

LOCATION.--Lat 36°31'31", long 79°45'57", Rockingham County, Hydrologic Unit 03010103, on right bank at Eden, 0.3 mi downstream from bridge on State Highway 14, 0.8 mi upstream from bridge on Secondary Road 1714, 1.2 mi south of Virginia-North Carolina State line, 1.3 mi downstream from Stuart Creek, and 3.9 mi upstream from mouth.

DRAINAGE AREA.--538 mi².

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1970, published as "at Spray."

REVISED RECORDS.--WSP 1433: 1946.

GAGE.--Water-stage recorder. Datum of gage is 539.56 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated since August 1950 by Philpott Lake (station 02071900) 40 mi upstream, usable capacity, 6,325,000,000 ft³. Some additional regulation by hydroelectric plant at Martinsville, VA, 18 mi upstream. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--44 years, 619 ft³/s, 15.62 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,600 ft³/s Aug. 15, 1940, gage height, 19.28 ft, from rating curve extended above 12,000 ft³/s on basis of computation of peak flow over dam 1.5 mi downstream; minimum, 38 ft³/s Aug. 7, 1967; minimum daily, 46 ft³/s Aug. 14, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,700 ft³/s Apr. 10, gage height, 10.88 ft; minimum, 61 ft³/s Oct. 3, gage height, 1.33 ft; minimum daily, 71 ft³/s Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	243	186	295	315	355	830	1200	603	788	770	200	397
2	149	209	289	185	2480	814	1230	1110	803	742	474	403
3	71	191	275	307	1250	787	2550	1100	774	223	472	417
4	174	335	250	374	719	768	1140	1160	996	336	518	108
5	229	530	203	354	323	694	2120	1110	566	856	631	155
6	233	287	275	367	366	348	1960	1070	499	645	505	506
7	229	175	258	357	847	988	2050	945	865	684	177	542
8	253	234	245	341	1020	857	2260	497	811	598	220	551
9	252	271	239	147	1010	1040	2110	1120	731	706	426	570
10	124	202	233	279	1050	780	6750	1080	734	161	424	590
11	223	210	237	357	1060	726	3120	1030	709	268	422	91
12	308	210	273	343	542	523	4540	1030	243	497	500	102
13	391	824	302	336	312	343	4460	1010	383	490	509	570
14	458	398	276	338	866	521	4030	913	612	487	118	649
15	344	277	268	251	1110	953	2430	318	802	486	190	604
16	311	272	2270	180	1070	938	2510	484	655	524	413	564
17	157	253	1230	267	1320	930	1410	834	626	134	408	627
18	155	254	587	314	1690	1790	1550	773	592	233	417	100
19	288	247	320	304	1160	2570	1680	769	228	501	417	202
20	304	256	414	304	613	769	1590	887	902	474	471	576
21	278	145	857	319	753	934	1510	866	670	469	107	591
22	281	224	801	288	934	1390	1480	906	734	468	157	580
23	271	234	797	432	1380	1290	1450	924	1040	505	360	561
24	89	226	796	666	1130	1290	4000	1100	989	254	384	550
25	370	234	772	524	1000	1230	1640	1020	909	288	467	110
26	618	156	170	451	792	1050	2170	1020	207	473	492	180
27	382	273	282	419	285	826	2100	1030	308	447	489	569
28	347	150	369	412	462	2060	2060	849	643	428	103	576
29	315	323	372	221	---	1460	2010	280	709	438	161	579
30	295	322	357	214	---	1230	1380	518	1010	466	403	556
31	152	---	354	383	---	1260	---	817	---	125	409	---
TOTAL	8294	8108	14666	10349	25899	31989	70490	27173	20538	14176	11444	13176
MEAN	268	270	473	334	925	1032	2350	877	685	457	369	439
MAX	618	824	2270	666	2480	2570	6750	1160	1040	856	631	649
MIN	71	145	170	147	285	343	1140	280	207	125	103	91
(*)	-40	+92	+72	+17	+86	+88	+17	-56	-17	-53	-127	-271

CAL YR 1982 TOTAL 161702 MEAN 443 MAX 2410 MIN 71 MEAN‡ 490 CFSM‡ .91 IN‡ 12.35
WTR YR 1983 TOTAL 256302 MEAN 702 MAX 6750 MIN 71 MEAN‡ 686 CFSM‡ 1.28 IN‡ 17.38

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02074218 DAN RIVER NEAR MAYFIELD, NC

LOCATION.--Lat 36°32'29", long 79°36'21", Rockingham County, Hydrologic Unit 03010103, near right bank on downstream end of bridge pier on Secondary Road 1761, at North Carolina-Virginia State line, 2.2 mi upstream from Whiteoak Creek, 3.0 mi northwest of Mayfield, and at mile 81.0.

DRAINAGE AREA.--1,778 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 458.4 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records good. Diurnal fluctuation and regulation at low flow caused by mills and Talbott Reservoir (station 02067800) and Townes Reservoir (station 02067820) on the Dan River and Philpott Lake (station 02074000) on the Smith River. Duke Power Company gage-height and temperature telemeters at station.

AVERAGE DISCHARGE.--7 years, 2,073 ft³/s, 15.83 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,300 ft³/s Sept. 23, 1979, gage height, 27.31 ft; minimum, 197 ft³/s Aug. 25, 1981, gage height, 1.39 ft; minimum daily, 271 ft³/s Aug. 24, 31, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1972, reached a stage of 28.1 ft, from floodmarks, discharge, 40,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	2400	14200	16.76	Apr. 11	0830	*20700	20.48
Feb. 3	0530	13400	16.23	Apr. 24	1630	15400	17.53
Mar. 19	0900	15000	17.30				

Minimum discharge, 250 ft³/s Sept. 11, gage height, 1.60 ft; minimum daily, 298 ft³/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	952	654	1410	1100	1160	2100	3610	2250	1870	1860	565	648
2	623	738	1340	1010	3050	2090	4450	2810	1800	1850	864	626
3	462	702	1220	1380	10600	1960	10900	2670	1690	1330	966	641
4	525	1060	1180	1720	4030	1860	5550	2860	1910	1140	893	527
5	644	2190	1040	1420	2630	1980	4800	2880	2030	1480	1090	384
6	647	1960	1070	1300	1900	1780	4280	2610	1620	1590	974	710
7	663	1050	1240	1220	1950	3760	4230	2480	1900	1450	840	785
8	681	888	1120	1200	2570	3340	4630	1740	2020	1320	702	801
9	835	888	1060	919	2430	5420	5190	2490	1890	1270	780	806
10	616	885	1010	1030	2270	4100	16100	2390	1710	907	794	794
11	728	758	1020	1260	2470	3520	17800	2260	1690	825	777	403
12	859	766	1230	1180	2520	2930	8660	2200	1100	1100	889	298
13	849	1440	1910	1070	1840	2220	7450	2070	1140	1040	996	629
14	1300	2440	1500	1060	2080	1950	6720	2110	1400	1020	623	882
15	1250	1450	1310	980	4770	2330	5410	1540	1670	1050	498	1050
16	957	1150	7080	893	4900	2230	7940	1610	1610	1020	697	935
17	614	1030	9180	867	5170	2100	5090	2070	1380	730	732	905
18	673	1020	3460	989	6380	5420	3970	1950	1420	676	741	484
19	719	966	2270	1050	4710	12500	4120	1930	1030	861	717	375
20	755	918	1820	1110	3280	5310	3790	2150	1840	863	760	728
21	753	837	2110	1110	2910	3850	3450	2810	2560	893	466	849
22	739	819	1910	1250	2920	4070	3270	2950	2020	922	431	906
23	761	883	1790	1450	3210	3380	3280	3520	2300	952	637	900
24	544	861	1710	2550	3530	3000	11600	2800	1910	757	1280	870
25	844	842	1670	2170	3100	2850	7720	2380	1800	838	983	536
26	2070	735	1080	1660	2740	2670	5170	2210	1070	1040	917	383
27	1640	853	1070	1440	1920	2800	4470	2250	1020	940	832	758
28	1090	734	1220	1330	1730	10200	4110	2110	1320	862	530	821
29	913	1030	1240	1280	---	5150	3890	1430	1410	838	437	818
30	889	1560	1250	989	---	3720	3450	1600	2150	829	663	801
31	668	---	1220	1030	---	3460	---	2090	---	596	681	---
TOTAL	26263	32107	58740	39017	92770	113950	185100	71220	50280	32869	23755	21053
MEAN	847	1070	1895	1259	3313	3676	6170	2297	1676	1060	766	702
MAX	2070	2440	9180	2550	10600	12500	17800	3520	2560	1860	1280	1050
MIN	462	654	1010	867	1160	1780	3270	1430	1020	596	431	298
(*)	-40	+92	+72	+17	+86	+88	+17	-56	-17	-53	-127	-271

CAL YR 1982 TOTAL 632484 MEAN 1733 MAX 11700 MIN 441 MEAN‡ 1780 CFSM‡ 1.00 IN‡ 13.57
WTR YR 1983 TOTAL 747124 MEAN 2047 MAX 17800 MIN 298 MEAN‡ 2031 CFSM‡ 1.14 IN‡ 15.48

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968-70, 1972-73, 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1976 to September 1982.
WATER TEMPERATURES: October 1976 to current year.

INSTRUMENTATION.--Temperature recorder since October 1977.

REMARKS.--Water temperatures near left bank sometimes affected by heated releases from power plant located 8.4 mi upstream.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 282 micromhos Oct. 11, 1981; minimum daily, 37 micromhos Oct. 10, 1976.
WATER TEMPERATURES: Maximum, 33.5°C June 16, 1981; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 31.5°C Aug. 22; minimum, 0.0°C Jan. 20.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.5	14.5	16.0	14.0	12.0	12.5	10.0	9.0	9.5	7.5	7.0	7.5
2	19.5	16.5	18.0	15.5	13.0	14.0	11.5	10.0	11.0	7.0	6.5	7.0
3	21.0	18.5	19.5	17.0	15.0	15.5	13.0	11.5	12.5	7.0	6.5	6.5
4	21.5	19.0	20.5	17.5	16.0	17.0	14.5	13.0	14.0	6.5	5.5	6.0
5	22.5	21.5	22.0	16.0	14.0	14.5	15.5	14.5	15.0	5.5	5.0	5.5
6	23.5	22.0	22.5	14.0	11.0	12.0	15.5	14.5	15.0	6.0	4.5	5.5
7	23.0	22.5	22.5	11.0	9.5	10.0	14.5	12.0	13.0	5.0	4.0	4.5
8	23.0	22.0	22.5	10.5	8.5	9.5	12.0	9.5	10.5	---	---	---
9	22.5	21.5	22.0	11.0	8.5	10.0	9.5	7.5	8.5	---	---	---
10	22.5	20.0	21.5	11.5	9.5	10.5	7.5	6.5	7.0	---	---	---
11	21.0	19.0	20.0	12.0	10.5	11.0	7.0	6.5	7.0	---	---	---
12	21.5	19.5	20.5	14.5	12.0	13.0	6.5	4.5	5.0	7.0	6.0	6.5
13	21.5	20.5	21.0	14.5	12.5	13.5	5.0	3.5	4.0	6.0	4.5	5.5
14	21.0	19.0	20.0	12.5	10.5	11.0	4.5	3.0	3.5	4.5	3.5	4.0
15	19.5	17.5	18.5	10.5	9.0	9.5	4.0	2.5	3.5	5.0	4.0	4.5
16	18.5	16.5	17.5	9.0	7.5	8.0	7.5	4.0	6.0	4.5	3.5	4.0
17	16.5	15.0	15.5	8.0	7.0	7.5	7.5	7.0	7.5	4.0	2.5	3.0
18	16.0	13.5	14.5	8.5	7.5	8.0	7.0	4.5	5.5	3.0	1.5	2.5
19	16.0	15.0	15.5	10.0	8.5	9.5	4.5	3.0	3.5	2.0	.5	1.5
20	17.0	15.0	16.0	11.0	10.0	10.5	4.0	3.0	3.5	2.0	.0	1.0
21	17.5	16.5	17.0	11.5	10.0	11.0	4.5	3.5	4.0	2.0	.5	1.5
22	16.5	15.5	16.0	13.5	11.5	12.5	4.0	3.0	3.5	1.5	.5	1.0
23	15.0	13.5	14.5	14.5	13.0	14.0	4.5	3.5	4.0	2.0	1.0	1.5
24	13.5	11.0	11.5	14.5	12.0	13.5	5.5	3.5	4.5	3.0	1.5	2.5
25	12.5	11.0	11.5	12.0	10.0	11.0	8.0	5.0	6.5	3.0	2.5	3.0
26	12.0	10.5	11.0	10.0	9.0	9.5	10.0	8.0	9.0	3.5	2.5	3.0
27	12.5	10.5	11.5	9.5	9.5	9.5	11.0	10.0	10.5	4.0	3.0	3.5
28	13.5	11.0	12.5	9.5	8.5	9.0	12.5	11.0	11.5	5.0	3.5	4.5
29	14.0	12.0	13.0	9.5	8.0	9.0	13.0	12.0	13.0	5.0	4.0	4.5
30	13.5	11.5	12.5	9.0	8.5	9.0	12.0	9.0	10.5	6.0	4.5	5.0
31	13.0	12.0	12.5	---	---	---	9.0	7.5	8.0	6.5	5.0	5.5
MONTH	23.5	10.5	17.0	17.5	7.0	11.0	15.5	2.5	8.0	7.5	.0	4.0

02074218 DAN RIVER NEAR MAYFIELD, NC--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.5	5.0	6.0	7.0	5.5	6.5	10.0	8.5	9.5	18.5	17.0	17.5
2	7.5	6.0	6.5	8.0	6.5	7.0	11.0	10.0	10.0	19.0	18.0	18.5
3	7.5	7.0	7.5	9.0	7.5	8.5	10.5	9.5	10.0	19.0	18.5	18.5
4	7.0	6.0	6.5	10.5	9.0	9.5	11.0	9.5	10.0	18.5	17.5	18.0
5	---	---	---	11.5	10.0	11.0	11.0	10.5	11.0	17.5	16.0	16.5
6	---	---	---	12.0	11.0	11.5	11.0	10.0	10.5	16.5	15.0	16.0
7	---	---	---	13.0	12.0	12.5	11.0	11.0	11.0	16.5	15.5	16.0
8	---	---	---	13.0	12.5	12.5	12.0	11.0	11.5	17.0	16.5	17.0
9	---	---	---	12.5	11.0	12.0	13.0	12.0	12.5	17.0	15.5	16.0
10	4.5	3.0	4.0	11.0	10.5	11.0	13.0	11.5	12.5	16.0	14.5	15.5
11	3.0	1.5	2.0	10.5	9.0	10.0	13.0	11.5	13.0	16.5	15.0	15.5
12	2.0	1.0	1.5	9.5	8.0	8.5	11.5	10.0	10.5	17.0	16.0	16.5
13	2.5	2.0	2.0	9.5	8.0	8.5	10.5	10.0	10.5	17.5	17.0	17.5
14	2.5	2.0	2.5	9.0	8.0	9.0	11.0	10.5	10.5	18.5	17.5	18.0
15	4.5	2.5	3.0	10.5	8.5	9.5	12.5	11.0	12.0	20.5	18.5	19.5
16	5.0	3.5	4.5	10.5	10.5	10.5	12.5	12.0	12.0	20.5	20.0	20.0
17	6.0	5.0	5.5	10.5	9.0	9.5	12.0	11.0	11.5	20.0	18.0	19.0
18	6.0	5.5	6.0	9.0	8.5	9.0	11.5	9.5	10.5	19.0	17.0	18.0
19	6.5	5.5	5.5	10.0	9.0	9.5	9.5	8.0	8.5	18.0	17.0	17.5
20	7.0	5.5	6.0	11.5	10.0	10.5	10.0	7.5	8.5	18.0	17.0	17.5
21	7.0	6.0	6.5	12.5	11.5	12.0	11.0	9.0	10.0	18.5	18.0	18.0
22	7.5	6.5	7.0	12.0	10.5	11.5	12.0	10.0	10.5	19.5	18.5	19.0
23	8.5	7.5	8.0	10.5	9.0	9.5	12.0	11.0	11.0	20.0	19.0	19.5
24	8.5	8.0	8.0	9.5	7.0	8.0	11.0	10.5	11.0	21.0	20.0	20.5
25	8.0	7.0	7.5	8.0	6.0	7.0	12.0	11.0	11.5	20.5	19.0	19.5
26	7.0	6.0	6.5	9.0	7.0	8.0	13.5	11.5	12.5	20.0	18.5	19.0
27	6.0	5.0	5.5	9.0	8.0	8.5	14.5	12.5	13.0	19.5	18.0	18.5
28	6.0	5.0	5.5	9.0	8.0	8.5	15.5	13.5	14.5	19.0	17.0	18.0
29	---	---	---	10.0	8.5	9.5	16.0	14.5	15.5	18.0	18.0	18.0
30	---	---	---	10.0	9.0	9.5	17.0	15.5	16.0	19.5	18.0	18.5
31	---	---	---	9.5	9.0	9.5	---	---	---	20.5	19.0	19.5
MONTH	8.5	1.0	5.5	13.0	5.5	9.5	17.0	7.5	11.5	21.0	14.5	18.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.5	18.5	19.5	24.0	23.0	23.0	27.0	26.0	26.5	28.5	27.0	27.5
2	19.0	17.5	18.0	24.0	23.5	23.5	27.0	26.5	26.5	27.0	23.5	25.0
3	19.0	18.0	18.5	26.0	24.0	25.0	27.0	26.5	27.0	24.5	22.5	23.5
4	19.5	19.0	19.5	27.0	25.5	26.0	26.5	25.5	26.0	25.5	23.5	24.5
5	21.0	19.5	20.0	26.5	25.5	26.0	25.5	25.0	25.0	28.0	24.5	26.0
6	22.0	20.5	21.5	26.0	24.5	25.0	26.0	25.5	25.5	27.5	25.5	26.5
7	22.0	22.0	22.0	24.5	23.0	24.0	26.5	24.5	25.5	27.5	26.0	27.0
8	22.0	20.5	21.0	23.5	22.0	23.0	29.0	26.0	27.0	26.0	23.5	25.0
9	21.5	20.5	20.5	23.5	22.0	22.5	29.5	28.0	29.0	24.0	22.5	23.0
10	21.0	19.5	20.5	24.5	22.0	23.0	29.5	28.5	29.0	24.5	22.5	23.0
11	21.0	20.0	20.5	26.0	23.0	24.5	29.5	28.5	29.0	26.0	21.5	23.5
12	23.0	20.0	21.5	27.5	25.0	26.0	28.5	25.5	27.0	26.5	23.5	25.0
13	23.5	21.0	22.5	28.5	26.5	27.5	25.5	23.0	24.0	26.0	23.5	25.0
14	23.5	22.5	23.0	29.0	27.5	28.5	24.0	21.5	22.5	23.5	19.5	22.0
15	23.0	22.0	22.5	29.0	28.0	28.5	24.5	21.0	23.0	19.5	19.0	19.5
16	23.5	22.5	23.0	30.0	28.5	29.5	24.5	22.5	23.5	19.5	18.5	19.0
17	24.5	22.5	23.5	30.0	28.5	29.5	26.0	23.5	24.5	20.0	18.5	19.0
18	24.0	23.5	23.5	30.0	28.0	29.0	26.5	26.0	26.0	22.5	18.5	20.0
19	25.0	23.0	24.0	30.0	29.0	29.5	28.0	26.5	27.0	24.0	20.0	22.0
20	25.0	24.0	24.5	31.0	30.0	30.5	29.0	27.0	28.0	23.0	21.5	22.0
21	24.5	23.0	23.5	31.0	29.0	30.0	30.5	26.0	28.0	22.0	20.0	21.5
22	24.0	23.0	23.5	30.5	29.0	29.5	31.5	29.5	30.0	20.0	17.5	18.5
23	23.5	22.0	22.5	29.0	28.0	29.0	30.5	29.5	30.0	17.5	16.0	16.5
24	23.0	20.5	21.5	29.0	28.0	28.0	30.0	26.5	28.5	16.0	14.5	15.5
25	22.5	21.5	22.0	28.5	26.5	27.5	28.0	26.0	26.5	17.0	13.5	15.0
26	25.5	22.5	24.0	28.0	26.0	26.5	26.0	24.0	25.5	17.0	13.5	15.5
27	29.0	25.0	26.5	26.5	25.0	25.5	25.0	23.5	24.0	16.5	14.0	15.5
28	29.0	27.0	27.5	26.5	24.5	25.5	26.5	23.0	24.5	17.5	15.5	16.5
29	27.5	26.5	27.0	26.0	24.5	25.5	27.5	25.0	26.5	17.5	16.5	17.0
30	26.5	23.5	24.5	26.0	24.0	25.0	28.0	26.0	27.0	16.5	16.0	16.5
31	---	---	---	27.0	24.0	25.5	28.0	25.5	26.5	---	---	---
MONTH	29.0	17.5	22.5	31.0	22.0	26.5	31.5	21.0	26.5	28.5	13.5	21.0
YEAR	31.5	.0	15.5									

02074500 SANDY RIVER NEAR DANVILLE, VA

LOCATION.--Lat 36°37'10", long 79°30'16", Pittsylvania County, Hydrologic Unit 03010103, on right bank 200 ft downstream from Hickory Forest Creek, 400 ft upstream from bridge on State Highway 863 between Callahans Store and Mount Cross, 5.5 mi northwest of western corporate limits of Danville, and 5.8 mi upstream from mouth.

DRAINAGE AREA.--112 mi^2.

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1930-41. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 460.38 ft National Geodetic Vertical Datum of 1929. Prior to June 26, 1942, at site 1,200 ft downstream at datum 5.57 ft lower.

REMARKS.--Records good. Diurnal fluctuation at low flow caused by small mill above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--54 years, 106 ft^3/s, 12.85 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft^3/s Aug. 14, 1940, gage height, 14.8 ft, present datum, from floodmarks, from rating curve extended above 11,000 ft^3/s; minimum, 3 ft^3/s Sept. 29, 1930, gage height, 0.40 ft, site and datum then in use; minimum daily, 8 ft^3/s Aug. 29, 31, Sept. 1, 2, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1500	1720	4.67	Apr. 10	0600	2230	5.16
Apr. 2	2200	*5130	7.11	Apr. 24	0930	1950	4.90

Minimum discharge, 16 ft^3/s Sept. 12, gage height, 0.94 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	44	78	68	67	109	163	133	87	70	65	23
2	35	44	76	69	191	107	879	131	86	65	54	24
3	34	44	69	89	318	94	1180	126	86	63	41	27
4	34	106	67	78	141	90	278	140	131	83	38	25
5	37	102	64	74	104	87	193	121	119	64	60	25
6	38	65	69	72	102	138	169	112	92	59	41	23
7	35	57	63	69	104	181	156	110	105	51	54	21
8	36	54	59	67	106	154	150	114	96	48	40	19
9	43	52	57	65	97	181	182	119	84	48	37	19
10	43	50	56	65	97	151	1310	105	80	47	35	19
11	41	48	60	67	90	146	324	103	77	47	34	18
12	39	50	88	63	95	125	204	101	75	45	48	17
13	61	236	79	60	102	111	168	99	71	42	38	54
14	86	111	69	60	148	104	150	112	69	41	35	77
15	50	83	69	61	266	98	603	138	75	40	35	42
16	42	70	866	59	266	92	397	131	69	38	34	32
17	39	64	299	58	339	92	209	116	66	38	33	31
18	39	62	152	58	450	407	183	101	66	38	32	29
19	39	60	115	57	255	644	178	99	67	39	32	29
20	40	60	100	55	195	216	153	121	85	38	30	28
21	40	59	89	66	164	240	140	116	110	36	28	32
22	39	57	80	76	147	166	131	334	89	35	30	36
23	39	56	77	113	163	136	160	228	75	37	31	31
24	39	55	74	136	146	123	1160	139	67	71	30	30
25	85	51	72	97	130	113	333	114	62	51	35	30
26	114	50	70	84	114	104	210	108	59	44	33	30
27	64	53	69	78	103	288	176	105	58	40	30	31
28	53	56	68	75	97	788	159	96	57	37	30	30
29	49	88	80	71	---	243	148	97	71	36	28	28
30	46	78	74	71	---	168	140	103	78	35	26	27
31	45	---	69	69	---	179	---	93	---	34	24	---
TOTAL	1459	2065	3377	2250	4597	5875	9986	3865	2413	1460	1141	887
MEAN	47.1	68.8	109	72.6	164	190	333	125	80.4	47.1	36.8	29.6
MAX	114	236	866	136	450	788	1310	334	131	83	65	77
MIN	34	44	56	55	67	87	131	93	57	34	24	17
CFSM	.42	.61	.97	.65	1.46	1.70	2.97	1.12	.72	.42	.33	.26
IN.	.48	.69	1.12	.75	1.53	1.95	3.32	1.28	.80	.48	.38	.29

CAL YR 1982 TOTAL 34293 MEAN 94.0 MAX 1290 MIN 26 CFSM .84 IN 11.39
WTR YR 1983 TOTAL 39375 MEAN 108 MAX 1310 MIN 17 CFSM .96 IN 13.08

02075500 DAN RIVER AT DANVILLE, VA

LOCATION.--Lat 36°35'15", long 79°22'55", Danville City, Hydrologic Unit 03010104, on left bank 50 ft downstream from Southern Railway bridge, 1,000 ft upstream from Fall Creek, and at mile 62.7.

DRAINAGE AREA.--2,050 mi^2, approximately.

PERIOD OF RECORD.--August 1934 to current year. Gage-height records collected in this vicinity 1890-1934, at same site 1934-49, and at Main Street Bridge, 0.25 mi upstream 1949-68, are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 972: 1936.

GAGE.--Water-stage recorder. Datum of gage is 379.29 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation caused by cotton mills above station. Since August 1950, flow regulated by Philpott Lake (station 02071900) 74.7 mi upstream. Gage-height telemeters at station. Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--49 years, 2,311 ft^3/s, 15.31 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,000 ft^3/s Aug. 15, 1940, gage height, 20.96 ft; maximum gage height, 21.34 ft June 22, 1972, backwater from debris; minimum discharge, 11 ft^3/s Sept. 5, 1966, gage height, 1.18 ft; minimum daily, 110 ft^3/s Sept. 5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,200 ft^3/s Apr. 11, gage height, 11.36 ft; minimum, 167 ft^3/s Sept. 13, gage height, 1.49 ft; minimum daily, 363 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1260	729	1590	1210	1200	2090	3690	2690	1920	1990	683	748
2	683	777	1490	1130	1770	2190	4150	2870	1900	1830	708	731
3	575	759	1370	1340	9640	2020	14500	2900	1820	1590	1070	741
4	538	1110	1290	1800	4310	1910	7000	3100	1980	1260	996	778
5	624	1890	1200	1590	2700	1870	4780	3180	2220	1460	1160	552
6	665	2230	1190	1390	1950	1880	4360	2870	1830	1600	1120	604
7	675	1240	1330	1310	1980	3830	4150	2590	1980	1490	1150	855
8	706	976	1200	1290	2500	3600	4260	2200	2120	1350	766	870
9	857	964	1140	1060	2440	4800	5050	2110	2020	1280	807	885
10	739	940	1090	1060	2260	4450	13200	2550	1830	1060	844	853
11	713	835	1110	1280	2440	3720	20800	2460	1750	872	916	812
12	855	851	1320	1250	2510	3180	10000	2370	1320	1020	956	363
13	948	1330	1980	1160	2040	2410	7620	2220	1220	1070	1020	486
14	1340	2550	1690	1110	2130	2050	6860	2290	1430	1020	916	1050
15	1350	1660	1420	1070	4710	2260	7340	1950	1640	1040	599	1160
16	1030	1270	5970	992	5250	2230	9170	1800	1750	1020	649	1030
17	736	1140	9890	942	5230	2100	5990	2200	1460	880	799	957
18	695	1110	3940	1000	6200	4700	4410	2150	1460	661	800	804
19	696	1070	2550	969	4950	12600	4550	2040	1260	803	769	484
20	768	1040	1960	878	3530	6010	4150	2310	1570	868	790	640
21	783	979	2090	935	3020	4210	3770	2380	2850	880	812	908
22	764	912	1960	1240	2920	4240	3550	3220	2400	890	437	1010
23	785	983	1830	1460	2970	3490	3570	4180	2410	906	566	963
24	666	946	1740	2300	3520	3080	11300	3160	1990	1010	1070	952
25	955	940	1680	2410	3110	2820	10100	2580	1830	868	1380	831
26	2070	838	1330	1790	2790	2490	5720	2260	1240	961	1090	462
27	1870	911	1140	1520	2120	2780	4950	2200	1050	978	924	660
28	1220	876	1260	1410	1840	9950	4510	2190	1270	897	858	901
29	1000	1120	1300	1350	---	5820	4230	1750	1390	829	566	891
30	943	1600	1350	1100	---	3910	3940	1600	2200	839	597	872
31	779	---	1280	1110	---	3530	---	2160	---	744	771	---
TOTAL	28288	34576	61680	40456	92030	116220	201670	76530	53110	33966	26589	23853
MEAN	913	1153	1990	1305	3287	3749	6722	2469	1770	1096	858	795
MAX	2070	2550	9890	2410	9640	12600	20800	4180	2850	1990	1380	1160
MIN	538	729	1090	878	1200	1870	3550	1600	1050	661	437	363
(*)	-40	+92	+72	+17	+86	+88	+17	-56	-17	-53	-127	-271

CAL YR 1982 TOTAL 722198 MEAN 1979 MAX 12600 MIN 342 MEAN‡ 2025 CFSM‡ .99 IN‡ 13.41
WTR YR 1983 TOTAL 788968 MEAN 2162 MAX 20800 MIN 363 MEAN‡ 2145 CFSM‡ 1.05 IN‡ 14.21

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02075500 DAN RIVER AT PACES, VA

LOCATION.--Lat 36°38'32", long 79°05'23", Halifax County, Hydrologic Unit 03010104, on right bank 100 ft upstream from bridge on State Highway 658, 0.5 mi southeast of Paces, 0.5 mi upstream from Big Toby Creek, 2.7 mi upstream from Birch Creek, and at mile 36.0.

DRAINAGE AREA.--2,550 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 322.48 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diurnal fluctuation caused by cotton mills at Danville. Since August 1950, flow regulated by Philpott Lake (station 02071900) 101.4 mi upstream. Gage height telemeters at station.

AVERAGE DISCHARGE.--32 years (water years 1952-83), 2,704 ft³/s, 14.40 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,800 ft³/s June 23, 1972, gage height, 33.15 ft, from rating curve extended above 32,000 ft³/s; minimum, 190 ft³/s Sept. 13, 1983; minimum daily, 244 ft³/s Sept. 4, 1956; minimum gage height, 1.71 ft Sept. 4, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 16, 1940, reached a stage of 32.3 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,700 ft³/s Apr. 12, gage height, 20.95 ft; minimum, 190 ft³/s Sept. 13, gage height, 1.95 ft; minimum daily, 269 ft³/s Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1510	1010	2320	1920	1550	2910	5070	3840	2560	2550	947	732
2	1100	984	2210	1800	1800	3840	4860	3290	2350	2250	940	687
3	793	1080	2010	2160	8220	3270	14800	3530	2270	2240	1260	657
4	629	1390	1830	2880	7930	2900	15100	3710	2270	1690	1020	691
5	653	2350	1760	2640	4090	2700	6830	3810	2560	1810	1290	630
6	773	3130	1780	2260	3000	3150	5870	3540	2480	2010	1150	401
7	794	2220	1930	2070	2840	5870	5390	3270	2150	1920	1300	674
8	804	1500	1860	1930	3360	6100	5310	3090	2480	1770	1120	808
9	917	1330	1680	1810	3570	5760	5890	2970	2500	1640	831	826
10	1110	1310	1570	1510	3220	6890	11600	3160	2290	1600	969	851
11	838	1260	1540	1680	3330	5610	18600	2990	2130	1220	940	809
12	923	1120	2160	1840	3440	4930	18100	2880	2040	1130	1080	544
13	1160	1600	3240	1700	3280	3850	9120	2770	1530	1410	1110	269
14	1590	2870	2900	1560	2940	3140	7720	2690	1600	1330	1190	846
15	1930	2760	2250	1550	6600	2970	9870	2880	1870	1300	856	1060
16	1590	1970	7550	1450	8470	3120	14700	2290	2220	1300	666	1190
17	1250	1680	14700	1320	7920	2960	10700	2620	1980	1280	806	1020
18	854	1530	8690	1290	8250	5920	6140	2770	1780	948	864	987
19	853	1520	4380	1330	7290	15700	5740	2520	2030	885	872	555
20	900	1460	3280	1260	5310	13900	5220	2770	1870	1120	840	385
21	972	1410	2850	1210	4240	7580	4710	3340	3060	1110	892	740
22	970	1300	2850	1440	3890	6570	4350	3870	3010	1110	667	974
23	942	1270	2590	2080	4160	5320	4240	4550	2610	1150	462	1040
24	973	1330	2450	2710	5040	4470	10500	3890	2570	1490	646	985
25	1510	1270	2330	3440	4630	4010	16200	3260	2270	1150	1410	928
26	3480	1230	2220	2670	4110	3670	8140	2890	2080	1130	1100	605
27	3670	1110	1670	2220	3440	3610	6060	2760	1420	1290	1040	410
28	2160	1260	1670	2020	2760	10200	5360	2740	1390	1210	934	764
29	1590	1340	1860	1890	---	10400	4970	2460	1780	1040	679	894
30	1350	2080	2050	1780	---	5720	4680	2000	2220	1050	467	875
31	1300	---	1980	1520	---	4910	---	2400	---	1000	612	---
TOTAL	39888	47674	94160	58940	128680	171950	255840	95550	65370	44133	28960	22837
MEAN	1287	1589	3037	1901	4596	5547	8528	3082	2179	1424	934	761
MAX	3670	3130	14700	3440	8470	15700	18600	4550	3060	2550	1410	1190
MIN	629	984	1540	1210	1550	2700	4240	2000	1390	885	462	269
(*)	-40	+92	+72	+17	+86	+88	+17	-56	-17	-53	-127	-271

CAL YR 1982 TOTAL 933846 MEAN 2558 MAX 17000 MIN 562 MEAN‡ 2605 CFSM‡ 1.02 IN‡ 13.87
WTR YR 1983 TOTAL 1053982 MEAN 2888 MAX 18600 MIN 269 MEAN‡ 2871 CFSM‡ 1.13 IN‡ 15.29

* Change in contents, equivalent in cubic feet per second, in Philpott Lake; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

02075500 DAN RIVER AT PACES, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1954 to September 1956.
WATER TEMPERATURES: January 1954 to September 1956.
SUSPENDED-SEDIMENT DISCHARGE: January 1954 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV 18...	1200	1560	130	7.2	8.5	28	10.4	130	220	23
FEB 02...	0900	1700	119	7.0	7.0	6.4	11.8	140	150	23
MAR 16...	0900	3200	117	7.1	10.5	16	9.4	62	130	23
MAY 11...	0945	3060	95	6.9	17.0	8.4	8.8	82	50	21
JUN 22...	1115	3060	92	7.2	24.0	5.4	6.9	1400	2200	18
AUG 10...	1000	960	131	7.9	27.0	31	5.4	50	1900	24

DATE	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
NOV 18...	0	5.6	2.1	15	2.1	29	13	16	.10	15
FEB 02...	0	5.6	2.1	13	1.5	28	10	11	<.10	15
MAR 16...	0	5.6	2.2	13	1.5	23	10	13	<.10	15
MAY 11...	0	5.0	2.0	10	1.5	24	8.7	6.3	.10	15
JUN 22...	0	4.5	1.6	9.4	1.4	21	10	8.0	.30	14
AUG 10...	0	5.9	2.2	17	2.3	29	12	13	.20	15

< Actual value is known to be less than the value shown.

02075500 DAN RIVER AT PACES, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV 18...	100	87	.27	.050	.20	.130	.080	.090	40	2
FEB 02...	81	75	.37	.050	.10	.120	.070	.060	--	--
MAR 16...	90	75	.35	.020	.20	.090	.050	.060	40	1
MAY 11...	62	63	.27	<.010	.20	.080	.060	.050	<10	1
JUN 22...	68	62	.50	.030	.60	.140	.060	.060	--	--
AUG 10...	96	86	.67	<.010	.20	.190	.130	.150	<10	2

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV 18...	29	<1	1	--	<3	5	350	<1	5	14
FEB 02...	--	--	--	--	--	--	--	--	--	--
MAR 16...	25	<1	<1	2	<3	1	160	4	<4	8
MAY 11...	29	<1	<1	<1	<3	3	140	8	<4	7
JUN 22...	--	--	--	--	--	--	--	--	--	--
AUG 10...	53	<1	1	<1	<3	4	160	3	4	9

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 18...	<.1	10	<1	<1	<1	40	<6.0	6	24	96
FEB 02...	--	--	--	--	--	--	--	--	12	78
MAR 16...	.2	<10	1	<1	<1	46	<6.0	4	38	96
MAY 11...	<.1	<10	5	<1	<1	37	<6.0	<3	77	43
JUN 22...	--	--	--	--	--	--	--	--	175	95
AUG 10...	.8	<10	1	<1	<1	46	<6.0	5	61	91

< Actual value is known to be less than the value shown.

02076500 GEORGES CREEK NEAR GRETNA, VA

LOCATION.--Lat 36°56'11", long 79°18'42", Pittsylvania County, Hydrologic Unit 03010105, on left bank 15 ft downstream from bridge on State Highway 40, 2.8 mi southeast of Gretna, and 5.8 mi upstream from Whitethorn Creek.

DRAINAGE AREA.--9.24 mi².

PERIOD OF RECORD.--September 1949 to current year.

REVISED RECORDS.--WSP 1703: 1950-52. WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 629.54 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Occasional regulation at low flow from unknown source. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--34 years, 9.51 ft³/s, 13.98 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,480 ft³/s Sept. 22, 1979, gage height, 8.50 ft, from rating curve extended above 640 ft³/s on basis of slope-area measurements at gage heights 4.93 ft and 6.22 ft and contracted-opening measurements at gage heights 7.75 ft and 8.50 ft; minimum daily, 1.0 ft³/s Mar. 12, Apr. 5, 1956, July 28, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0800	196	3.27	Apr. 10	0500	342	4.21
Mar. 19	0030	562	5.31	May 22	0930	167	3.08
Apr. 2	2130	*772	6.25				

Minimum discharge, 1.5 ft³/s Sept. 8, gage height, 0.71 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	5.9	7.2	5.7	5.6	9.1	13	12	8.5	7.1	4.6	2.5
2	3.9	5.7	7.0	5.9	14	8.3	124	12	8.3	6.3	4.7	2.6
3	4.3	5.8	6.2	6.7	11	7.2	158	12	8.1	5.9	4.4	2.7
4	3.8	18	6.0	5.7	7.9	6.9	28	14	8.9	5.7	4.2	2.7
5	4.1	11	5.8	5.7	6.8	6.7	21	12	8.4	5.8	3.9	2.6
6	4.1	7.4	6.2	5.6	7.8	12	20	11	8.0	5.5	4.0	2.5
7	3.8	6.4	5.3	5.4	8.4	35	32	11	8.3	5.2	3.8	2.3
8	4.3	6.0	5.1	5.3	7.7	20	25	11	8.0	5.1	3.6	2.1
9	4.7	5.6	5.1	5.3	6.9	18	35	11	7.2	5.0	3.2	2.1
10	5.2	5.2	4.9	5.4	6.5	13	130	11	7.0	5.1	3.1	2.4
11	4.7	5.1	5.6	5.3	7.0	12	27	10	6.7	5.0	3.2	2.3
12	4.5	6.5	9.3	5.1	7.4	9.5	20	10	6.7	4.7	3.5	2.4
13	13	20	7.7	4.9	7.7	8.3	18	9.9	6.5	4.5	3.5	2.8
14	7.3	9.2	6.7	4.9	13	7.8	16	10	6.5	4.2	3.5	4.1
15	5.1	7.8	6.7	5.2	21	7.4	51	10	6.5	4.2	3.4	3.5
16	4.6	7.0	57	5.1	20	7.1	29	12	6.2	4.0	3.3	3.2
17	4.6	6.7	17	5.1	27	7.1	19	11	6.0	4.0	3.3	3.2
18	4.9	6.7	11	4.9	26	105	19	9.7	6.2	3.7	3.3	3.2
19	4.9	6.2	8.7	4.7	18	140	18	9.8	7.0	3.7	3.2	3.1
20	4.9	6.7	7.7	4.6	13	23	17	12	12	3.6	2.9	3.2
21	4.9	6.5	6.9	5.4	11	23	17	14	7.5	3.8	3.0	3.8
22	4.7	6.0	6.5	7.3	9.6	15	16	52	7.2	4.7	3.0	3.6
23	4.9	6.0	6.3	11	12	13	19	20	7.0	4.7	3.6	3.2
24	5.0	5.8	6.2	9.3	9.0	11	53	13	6.5	6.1	3.4	3.3
25	18	5.3	6.2	7.4	8.9	10	22	11	6.2	5.2	3.4	3.4
26	14	5.6	6.1	6.7	7.9	9.9	18	10	6.2	4.9	3.1	3.3
27	7.3	6.0	5.9	6.5	7.4	28	16	9.5	6.0	4.1	2.8	3.2
28	6.3	6.7	5.9	6.1	7.1	29	15	9.0	6.5	4.1	3.0	3.1
29	5.9	9.5	5.7	6.0	---	17	14	9.5	7.2	4.0	3.0	3.1
30	5.8	7.2	5.4	6.0	---	13	13	10	7.2	3.9	2.6	3.1
31	5.9	---	5.5	5.8	---	15	---	8.8	---	4.1	2.5	---
TOTAL	183.5	223.5	262.8	184.0	315.6	647.3	1023	388.2	218.5	147.9	106.0	88.6
MEAN	5.92	7.45	8.48	5.94	11.3	20.9	34.1	12.5	7.28	4.77	3.42	2.95
MAX	18	20	57	11	27	140	158	52	12	7.1	4.7	4.1
MIN	3.8	5.1	4.9	4.6	5.6	6.7	13	8.8	6.0	3.6	2.5	2.1
CFSM	.64	.81	.92	.64	1.22	2.26	3.69	1.35	.79	.52	.37	.32
IN.	.74	.90	1.06	.74	1.27	2.61	4.12	1.56	.88	.60	.43	.36

CAL YR 1982 TOTAL 3065.2 MEAN 8.40 MAX 111 MIN 3.5 CFSM .91 IN 12.34
WTR YR 1983 TOTAL 3788.9 MEAN 10.4 MAX 158 MIN 2.1 CFSM 1.13 IN 15.25

02077000 BANISTER RIVER AT HALIFAX, VA

LOCATION.--Lat 36°46'35", long 78°54'58", Halifax County, Hydrologic Unit 03010105, on left bank 10 ft downstream from bridge on U.S. Highway 360, 1,700 ft downstream from Terrible Creek, 1 mi northeast of Halifax, and 10 mi upstream from mouth.

DRAINAGE AREA.--547 mi².

PERIOD OF RECORD.--September 1904 to December 1905, October 1928 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 892: 1929-30, 1932-35. WSP 972: 1938(M), 1940. WSP 1112: 1943(M). WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 318.54 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Sept. 28, 1904, to Dec. 31, 1905, nonrecording gage at site 400 ft upstream at different datum. Dec. 9, 1928, to Sept. 20, 1950, water-stage recorder at site 400 ft upstream at present datum.

REMARKS.--Records good. Low and medium flow regulated at times during year by a lake 0.5 mi above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--56 years, 506 ft³/s, 12.56 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s Sept. 20, 1944, gage height, 40.8 ft, from floodmarks, from rating curve extended above 13,000 ft³/s on basis of slope-area measurement of peak flow and velocity-area study; minimum, 6.0 ft³/s many days in August and September 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,850 ft³/s Apr. 4, gage height, 20.48 ft; minimum daily, 60 ft³/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	163	246	458	417	321	577	1080	653	425	262	115	99
2	159	239	495	390	404	803	985	618	400	258	139	96
3	157	235	457	423	827	797	3110	587	384	242	183	95
4	154	398	397	483	863	631	7260	639	379	227	179	90
5	151	804	363	468	627	540	3710	644	406	381	161	83
6	150	581	393	445	499	565	1370	559	392	301	149	82
7	150	399	368	420	497	953	1080	510	485	231	157	80
8	149	326	328	389	578	1510	1230	492	529	206	176	78
9	149	301	300	365	600	1390	1120	486	425	196	166	73
10	152	289	285	350	552	1100	3180	474	373	189	140	65
11	153	278	295	348	559	956	6100	454	337	185	125	60
12	153	274	411	347	546	942	3310	440	313	185	127	63
13	167	770	511	324	581	768	1440	430	300	180	123	73
14	204	1240	465	306	583	636	989	422	290	173	122	91
15	283	786	400	300	1020	567	1750	411	295	162	118	80
16	245	560	2020	292	1710	528	3980	423	281	155	114	77
17	200	422	3880	284	1740	488	3670	500	273	148	109	78
18	183	233	2520	275	1880	726	1650	477	266	141	105	77
19	178	335	1240	224	1730	3340	1170	425	316	137	106	77
20	174	334	774	197	1270	6630	1050	457	338	138	108	76
21	173	325	638	239	932	3510	873	639	346	134	107	76
22	172	315	551	303	761	2130	772	713	326	129	105	78
23	170	294	483	409	736	1420	730	2570	303	125	87	77
24	169	282	442	572	807	931	2360	1910	281	132	73	77
25	556	262	411	582	758	772	3800	808	254	158	73	78
26	1250	252	400	483	708	674	2250	588	240	166	76	79
27	822	252	387	413	624	707	1210	541	231	158	80	80
28	439	269	374	383	550	2240	901	502	227	144	81	80
29	328	350	396	359	---	3380	783	451	236	132	109	80
30	283	493	483	343	---	1830	705	444	272	125	114	80
31	260	---	468	332	---	1090	---	463	---	118	103	---
TOTAL	8096	12144	21393	11465	23263	43131	63618	19730	9923	5618	3730	2378
MEAN	261	405	690	370	831	1391	2121	636	331	181	120	79.3
MAX	1250	1240	3880	582	1880	6630	7260	2570	529	381	183	99
MIN	149	233	285	197	321	488	705	411	227	118	73	60
CFSM	.48	.74	1.26	.68	1.52	2.54	3.88	1.16	.61	.33	.22	.15
IN.	.55	.83	1.45	.78	1.58	2.93	4.33	1.34	.67	.38	.25	.16

CAL YR 1982 TOTAL 196608 MEAN 539 MAX 5680 MIN 137 CFSM .99 IN 13.37
WTR YR 1983 TOTAL 224489 MEAN 615 MAX 7260 MIN 60 CFSM 1.12 IN 15.27

02077500 HYCO RIVER NEAR DENNISTON, VA

LOCATION.--Lat 36°35'16", long 78°53'56", Halifax County, Hydrologic Unit 03010104, on left bank 60 ft upstream from bridge on U.S. Highway 501, 0.8 mi upstream from Mayo Creek, 2.5 mi northeast of Denniston, and 7.3 mi south of South Boston.

DRAINAGE AREA.--289 mi^2.

PERIOD OF RECORD.--October 1928 to September 1934, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1383: Drainage area, 1930. WSP 1503: 1930(M). WDR VA-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 315.24 ft National Geodetic Vertical Datum of 1929. July 10, 1929, to Mar. 14, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good. Small diurnal fluctuation at low flow in some years caused by mill above station. Since 1964, flow regulated by Hyco Lake 15.7 mi upstream, capacity 75,480 acre-ft, and since Apr. 26, 1974, by Roxboro Steam-Electric Generating Plant afterbay Reservoir, capacity 12,000 acre-ft. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--39 years, 253 ft^3/s, 11.89 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft^3/s July 15, 1975, gage height, 24.27 ft, from rating curve extended above 8,200 ft^3/s; minimum, 0.004 ft^3/s Sept. 14, 1932, gage height, 3.58 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in August 1928 and September 1945 reached stages of 26.4 ft and 25.6 ft, respectively, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,060 ft^3/s Apr. 17, gage height, 17.72 ft; minimum, 16 ft^3/s Oct. 4-5, gage height, 4.58 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	187	139	265	86	952	725	408	119	65	30	25
2	20	185	129	248	359	1130	633	394	114	62	53	25
3	18	183	110	439	809	972	1110	384	108	50	38	24
4	17	189	101	426	815	805	1590	427	118	40	32	24
5	18	295	95	697	499	532	1370	347	123	65	31	23
6	20	738	119	531	457	695	723	202	106	47	32	21
7	20	662	122	476	507	1300	657	192	114	40	35	22
8	20	211	108	429	617	1900	521	186	203	38	32	23
9	21	173	213	254	552	2080	499	184	190	37	30	23
10	24	170	197	247	515	1110	585	117	184	36	30	23
11	21	168	192	253	530	820	537	109	176	35	29	24
12	20	167	503	249	542	630	486	103	170	37	31	25
13	26	174	895	390	492	574	455	91	156	38	32	27
14	89	170	1290	365	653	506	238	89	86	37	28	48
15	60	178	883	198	1410	468	732	125	111	37	26	44
16	31	185	1390	188	1680	410	2810	193	92	36	24	29
17	25	171	1980	183	2170	230	3880	335	90	31	24	26
18	22	167	2310	183	2090	957	2680	152	88	31	27	25
19	20	164	1230	175	1180	2890	1650	120	128	31	28	24
20	20	162	642	87	779	3450	880	196	96	30	28	24
21	20	159	545	79	650	2750	306	245	165	30	26	27
22	20	152	460	88	463	1890	267	274	102	30	25	31
23	20	83	427	156	527	643	[illegible]60	420	94	31	26	29
24	18	79	407	132	477	515	1390	529	89	45	27	25
25	830	76	222	113	642	273	1600	458	56	49	27	24
26	1460	74	204	103	695	246	1970	207	30	35	26	23
27	1310	75	200	97	611	353	1310	182	27	35	26	24
28	1150	77	198	96	557	781	626	114	28	33	26	24
29	293	195	222	91	---	621	522	107	65	32	25	24
30	213	223	246	87	---	710	439	121	71	30	25	24
31	195	---	258	86	---	716	---	150	---	27	26	---
TOTAL	6061	5892	16037	7411	21364	31909	31451	7161	3299	1200	905	784
MEAN	196	196	517	239	763	1029	1048	231	110	38.7	29.2	26.1
MAX	1460	738	2310	697	2170	3450	3880	529	203	65	53	48
MIN	17	74	95	79	86	230	238	89	27	27	24	21
CFSM	.68	.68	1.79	.83	2.64	3.56	3.63	.80	.38	.13	.10	.09
IN.	.78	.76	2.06	.95	2.75	4.11	4.05	.92	.42	.15	.12	.10

CAL YR 1982 TOTAL 123734 MEAN 339 MAX 2950 MIN 17 CFSM 1.17 IN 15.93
WTR YR 1983 TOTAL 133474 MEAN 366 MAX 3880 MIN 17 CFSM 1.27 IN 17.18

02079490 JOHN H. KERR RESERVOIR NEAR BOYDTON, VA

LOCATION.--Lat 36°35'56", long 78°18'06", Mecklenburg County, Hydrologic Unit 03010102, at John H. Kerr Dam on Roanoke River, 2.7 mi upstream from Allen Creek, 6.7 mi southeast of Boydton, 18 mi upstream from the Virginia-North Carolina State line, and at mile 178.7.

DRAINAGE AREA.--7,780 mi², approximately.

PERIOD OF RECORD.--July 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by concrete dam with earth embankments. Spillway, with crest at elevation 288.0 ft, is equipped with 22 radial gates 32 ft high by 42 ft wide. Storage began in September 1950 during construction; initial filling started June 30, 1952; water in reservoir first reached rule-curve elevation in March 1953. Total capacity at top of gates, elevation, 320 ft, is 2,770,000 acre-ft of which 1,281,400 acre-ft is controlled flood storage between elevations 300 ft, top of power pool, and 320 ft; 316,900 acre-ft is available for power between elevations 293.0 ft, bottom of power pool, and 300 ft; 1,171,700 acre-ft is inactive and dead storage below elevation 293.0 ft. Figures given herein represent total contents. Reservoir is used for flood control, hydroelectric power, low-water regulation for navigation and pollution abatement, release of water for downstream fish spawning, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,656,300 acre-ft Apr. 3, 1975, elevation, 318.85 ft; minimum (after first filling to rule curve), 724,700 acre-ft Feb. 3, 1956, elevation, 280.23 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,327,500 acre-ft Apr. 18, elevation, 314.35 ft; minimum, 1,217,500 acre-ft Sept. 30, elevation, 294.10 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	297.72	1378650	
Oct. 31	299.33	1455700	+77050
Nov. 30	296.34	1315270	-140430
Dec. 31	299.18	1448340	+133070
CAL YR 1982			+49950
Jan. 31	296.75	1333800	-114540
Feb. 28	303.18	1653200	+319400
Mar. 31	306.19	1819490	+166290
Apr. 30	312.83	2224400	+404910
May 31	302.09	1595450	-628950
June 30	300.25	1501220	-94230
July 31	297.93	1388440	-112780
Aug. 31	295.36	1271740	-116700
Sept. 30	294.12	1218320	-53420
WTR YR 1983			-160330

02079640 ALLEN CREEK NEAR BOYDTON, VA

LOCATION.--Lat 36°40'46", long 78°19'37", Mecklenburg County, Hydrologic Unit 03010106, on left bank at upstream side of bridge on U.S. Highway 58, 0.8 mi upstream from Coleman Creek, 2.3 mi downstream from Layton Creek, 3.7 mi east of Boydton, and 11.8 mi southwest of South Hill.

DRAINAGE AREA.--53.4 mi².

PERIOD OF RECORD.--October 1961 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 216.50 ft National Geodetic Vertical Datum of 1929 (levels by Virginia Department of Highways and Transportation).

REMARKS.--Records good. Several observations of water temperature were made during the year.

COOPERATION.--Records computed and furnished by the Virginia State Water Control Board.

AVERAGE DISCHARGE.--22 years, 44.2 ft³/s, 11.24 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,620 ft³/s Oct. 23, 1971, gage height, 21.80 ft, from rating curve extended above 3,100 ft³/s; no flow many days in August, September, and October 1968, September and October 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1630	2010	16.30	Mar. 28	0200	1430	a14.50
Feb. 2	2000	1050	12.85	Apr. 10	1030	1010	12.65
Mar. 19	0430	2410	17.28	Apr. 16	0430	*3550	19.28
Mar. 21	1430	2940	18.32	Apr. 24	0930	1020	12.68

a From high-water mark.

Minimum discharge, 0.20 ft³/s Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	30	113	45	23	242	111	40	20	9.5	3.0	1.2
2	5.4	31	94	33	334	233	79	37	19	11	5.0	1.5
3	5.2	30	64	121	311	96	108	35	17	9.7	3.3	1.4
4	5.0	131	53	68	100	70	75	52	17	7.9	2.8	1.3
5	5.0	202	45	66	63	59	64	39	17	9.3	2.7	1.2
6	5.0	50	39	93	59	138	65	32	15	9.1	2.5	1.0
7	4.8	30	33	51	129	335	93	29	15	7.3	2.2	.80
8	4.6	23	27	44	190	213	184	28	17	6.2	2.0	.61
9	4.7	20	25	40	93	183	99	27	15	6.0	1.9	.50
10	4.9	17	24	40	70	112	548	25	14	5.8	1.9	.45
11	5.0	16	42	38	64	127	190	24	13	5.5	1.8	.38
12	5.2	15	263	35	54	94	97	23	13	5.2	1.9	.32
13	9.0	39	136	32	60	67	74	22	12	5.1	1.7	2.0
14	46	33	73	30	215	57	64	22	12	4.8	1.5	11
15	13	112	69	32	481	51	522	23	12	4.4	1.4	8.5
16	9.1	67	1140	30	395	45	1750	85	12	4.2	1.3	3.7
17	7.7	38	242	26	525	42	159	65	12	4.0	1.3	2.3
18	7.3	29	88	22	396	616	99	30	11	3.8	1.1	1.9
19	7.3	24	80	21	220	1170	101	25	13	3.6	1.1	1.5
20	7.7	22	70	19	133	150	74	207	14	3.4	1.1	1.3
21	8.1	20	60	30	94	1580	62	202	14	3.3	.97	1.2
22	8.3	18	50	40	78	239	55	127	17	4.6	.85	2.2
23	7.9	17	45	109	108	105	55	172	15	4.4	1.3	1.9
24	8.3	16	40	48	118	80	541	50	12	4.5	2.5	1.3
25	407	13	35	36	200	68	143	31	11	4.5	2.6	1.2
26	382	12	33	32	188	58	79	24	9.8	4.3	2.1	1.0
27	74	13	32	31	103	176	62	21	8.9	4.0	1.8	1.1
28	43	14	30	28	77	532	55	19	9.0	3.6	1.6	1.0
29	33	323	38	28	---	128	48	18	8.9	3.2	1.6	1.0
30	29	174	40	27	---	82	43	21	9.1	2.9	1.5	1.2
31	29	---	42	26	---	105	---	29	---	2.9	1.3	---
TOTAL	1196.9	1579	3165	1321	4881	7253	5699	1584	404.7	168.0	59.62	55.96
MEAN	38.6	52.6	102	42.6	174	234	190	51.1	13.5	5.42	1.92	1.87
MAX	407	323	1140	121	525	1580	1750	207	20	11	5.0	11
MIN	4.6	12	24	19	23	42	43	18	8.9	2.9	.85	.32
CFSM	.72	.99	1.91	.80	3.26	4.38	3.56	.96	.25	.10	.04	.04
IN.	.83	1.10	2.20	.92	3.40	5.05	3.97	1.10	.28	.12	.04	.04

CAL YR 1982 TOTAL 23142.40 MEAN 63.4 MAX 1150 MIN 4.5 CFSM 1.19 IN 16.12
WTR YR 1983 TOTAL 27367.18 MEAN 75.0 MAX 1750 MIN .32 CFSM 1.40 IN 19.06

KANAWHA RIVER BASIN

03161000 SOUTH FORK NEW RIVER NEAR JEFFERSON, NC

LOCATION.--Lat 36°23'35", long 81°24'26", Ashe County, Hydrologic Unit 05050001, on right bank 600 ft upstream from bridge on State Highways 16 and 88, 0.2 mi downstream from Bear Creek, and 4 mi southeast of Jefferson.

DRAINAGE AREA.--205 mi².

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1925-26(M), 1928-30(M), 1931-32, 1933-35(M), 1941-42(m), 1944(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,657.04 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1934, nonrecording gage on bridge 400 ft downstream at same datum. Oct. 14, 1934, to Mar. 25, 1935, nonrecording gage at present site and datum.

REMARKS.--Records good. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--59 years, 432 ft³/s, 28.62 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,800 ft³/s Aug. 14, 1940, gage height, 22.50 ft, from rating curve extended above 5,100 ft³/s on basis of slope-area measurement of peak flow; minimum, 52 ft³/s Dec. 24, 1943, result of freezeup; minimum daily, 65 ft³/s Sept. 9, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 15, 1916, reached a stage of 18.0 ft, from floodmarks witnessed by local resident, discharge, 35,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,600 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 2	1500	*8020	8.77	Apr. 3	0200	2820	5.52
Mar. 6	1830	5300	7.28	Apr. 10	0030	3620	6.17
Mar. 18	1600	4450	6.75				

Minimum discharge, 171 ft³/s Sept. 20, gage height, 1.88 ft; minimum daily, 174 ft³/s Sept. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	187	233	518	443	490	660	951	870	565	464	234	199
2	186	228	547	449	4760	645	1630	841	551	493	240	214
3	183	253	482	566	3700	612	2160	813	529	461	243	295
4	181	651	511	502	1390	598	1380	861	608	497	236	258
5	183	739	631	443	993	596	1210	780	611	444	227	234
6	218	445	1380	425	851	2410	1340	746	536	450	222	218
7	195	363	857	402	758	2760	1240	718	669	390	235	202
8	191	323	643	390	674	1430	1240	713	591	368	276	196
9	212	300	548	382	621	1150	1500	716	524	358	333	203
10	217	288	489	413	605	1030	2870	668	495	346	250	206
11	343	275	458	490	631	932	1820	658	478	339	221	202
12	270	293	509	443	566	846	1480	658	462	334	253	203
13	314	550	463	399	530	786	1290	742	451	324	238	228
14	410	413	400	386	523	747	1220	723	443	325	218	216
15	293	339	422	377	528	717	1520	676	444	318	213	208
16	244	311	1420	368	537	691	1330	758	491	309	212	192
17	223	295	979	391	571	859	1160	843	548	300	221	186
18	214	306	699	289	629	3690	1100	700	501	296	213	181
19	209	362	597	217	596	2270	1080	687	503	288	206	178
20	206	425	556	296	589	1490	1020	822	510	286	201	174
21	204	437	508	326	607	1670	987	1220	481	280	228	267
22	202	433	461	322	636	1380	937	1240	483	274	225	321
23	191	410	441	846	1290	1160	1050	1030	582	262	205	234
24	187	373	441	684	1120	1060	2250	869	464	264	209	199
25	462	353	466	496	932	994	1530	777	420	291	445	190
26	657	327	522	410	780	925	1240	729	406	363	283	187
27	361	316	461	402	688	1150	1100	680	744	287	240	183
28	294	344	508	378	646	1410	1010	634	557	258	300	181
29	266	684	590	362	---	1080	960	627	476	250	252	183
30	250	598	512	383	---	975	902	643	479	246	217	182
31	240	---	469	492	---	995	---	591	---	239	203	---
TOTAL	7993	11667	18488	13172	27241	37718	40507	24033	15602	10404	7499	6320
MEAN	258	389	596	425	973	1217	1350	775	520	336	242	211
MAX	657	739	1420	846	4760	3690	2870	1240	744	497	445	321
MIN	181	228	400	217	490	596	902	591	406	239	201	174
CFSM	1.26	1.90	2.91	2.07	4.75	5.94	6.59	3.78	2.54	1.64	1.18	1.03
IN.	1.45	2.12	3.35	2.39	4.94	6.84	7.35	4.36	2.83	1.89	1.36	1.15

CAL YR 1982 TOTAL 144535 MEAN 396 MAX 2130 MIN 181 CFSM 1.93 IN 26.23
WTR YR 1983 TOTAL 220644 MEAN 605 MAX 4760 MIN 174 CFSM 2.95 IN 40.04

03164000 NEW RIVER NEAR GALAX, VA

LOCATION.--Lat 36°38'50", long 80°58'45", Grayson County, Hydrologic Unit 05050001, on left bank at upstream side of bridge on State Highway 94, 500 ft downstream from Meadow Creek, 1.2 mi southwest of Old Town, 3.1 mi southwest of Galax, and 3.6 mi downstream from Elk Creek.

DRAINAGE AREA.--1,131 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 758: Drainage area, 1933(M). WSP 893: 1930(M), 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 2,208.04 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Appalachian Power Company gage-height transmitter at station, recorder at Roanoke.

AVERAGE DISCHARGE.--54 years, 1,906 ft³/s, 22.89 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 141,000 ft³/s Aug. 14, 1940, gage height, 25.7 ft, from floodmark, from rating curve extended above 32,000 ft³/s on basis of computation of peak flow over dam at Fries 6 mi downstream and slope-area measurement of peak flow; minimum, 193 ft³/s Jan. 9, 1956, gage height, 0.52 ft, result of freezeup; minimum daily, 265 ft³/s Sept. 19, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1430	9100	3.95	Mar. 21	1800	9340	4.01
Feb. 2	2130	*30500	8.50	Apr. 3	0400	10300	4.25
Mar. 7	0100	13500	5.00	Apr. 10	0730	20000	6.41
Mar. 18	2030	23800	7.18	Apr. 24	1100	10900	4.40

Minimum discharge, 576 ft³/s Oct. 4, gage height, 0.89 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	654	927	3550	1700	2570	2770	3700	3280	2020	1570	865	761
2	628	914	3830	1680	14500	2690	4880	3140	1950	1680	900	779
3	615	901	3050	1950	20100	2510	9140	3040	1880	1480	922	1050
4	615	2000	2600	2020	8690	2380	6170	3190	2440	1660	924	910
5	615	3690	2570	1770	5750	2330	4920	3010	2720	1550	908	896
6	615	2470	4510	1650	4700	4840	4820	2750	2340	1530	903	807
7	628	1770	3660	1610	4040	11500	4800	2620	2470	1440	885	752
8	680	1460	2700	1520	3450	6730	5290	2610	2350	1360	934	709
9	720	1320	2240	1480	3050	5450	5610	2660	2030	1240	1040	678
10	1260	1200	1980	1570	2900	4540	15900	2510	1840	1190	996	672
11	1140	1120	1860	1910	2900	4070	9200	2400	1710	1170	907	660
12	1110	1110	2070	1980	2730	3610	6530	2340	1620	1140	1020	710
13	1160	1770	1930	1760	2450	3320	5340	2450	1590	1130	1090	892
14	1570	2200	1650	1610	2300	3090	4690	2660	1520	1120	923	1370
15	1360	1700	1790	1620	2290	2950	5090	2540	1550	1100	831	1060
16	1060	1400	6710	1580	2420	2800	4890	2760	1680	1090	806	833
17	901	1200	6060	1400	2820	2850	4180	3390	1850	1060	884	747
18	823	1250	3920	1300	3430	15700	3960	2840	2110	1040	805	702
19	797	1300	3080	1200	3290	16100	3910	2600	2040	1030	783	671
20	784	1400	2700	1100	3090	8590	3710	3270	2060	1020	749	642
21	797	1600	2420	1150	3070	8190	3640	4230	2120	992	753	719
22	810	1700	2120	1700	3140	7760	3450	5240	1760	966	713	920
23	784	1790	1950	4500	4470	5850	3570	4510	1620	984	817	922
24	745	1720	1930	3000	5240	4840	9420	3680	1660	989	812	795
25	1480	1930	1930	2590	4400	4260	7740	3090	1480	1080	1280	702
26	2920	1790	1980	1980	3710	3760	5690	2790	1400	1180	1230	670
27	2050	1630	1950	1750	3180	4040	4680	2570	1460	1260	1130	657
28	1400	1650	1900	1680	2880	5430	4120	2350	1760	1040	1070	644
29	1160	4450	2050	1730	---	4600	3740	2270	1780	949	1070	637
30	1040	4730	1980	1920	---	3900	3480	2310	1590	909	950	631
31	980	---	1790	2590	---	3770	---	2230	---	882	808	---
TOTAL	31901	54092	84460	57000	127560	165220	166260	91330	56400	36831	28708	23598
MEAN	1029	1803	2725	1839	4556	5330	5542	2946	1880	1188	926	787
MAX	2920	4730	6710	4500	20100	16100	15900	5240	2720	1680	1280	1370
MIN	615	901	1650	1100	2290	2330	3450	2230	1400	882	713	631
CFSM	.91	1.59	2.41	1.63	4.03	4.71	4.90	2.61	1.66	1.05	.82	.70
IN.	1.05	1.78	2.78	1.87	4.20	5.43	5.47	3.00	1.86	1.21	.94	.78

CAL YR 1982 TOTAL 656439 MEAN 1798 MAX 11000 MIN 580 CFSM 1.59 IN 21.59
WTR YR 1983 TOTAL 923360 MEAN 2530 MAX 20100 MIN 615 CFSM 2.24 IN 30.37

03164000 NEW RIVER NEAR GALAX, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1931, 1950, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to current year.
WATER TEMPERATURES: October to December 1949, April 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 130 micromhos Nov. 3, 1981; minimum daily, 10 micromhos Nov. 20, 1975.
WATER TEMPERATURES (water years 1968-83): Maximum, 31.0°C July 17, 18, 1969; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT 12...	1305	1160	58	7.3	16.5	16	9.1	17	0	4.1	1.6	3.0
NOV 22...	1305	1700	49	7.2	11.0	7	10.5	15	0	3.8	1.3	2.9
JAN 10...	1300	1590	44	7.2	4.0	3	12.8	13	0	3.4	1.2	2.7
FEB 23...	1200	4420	50	7.0	6.5	15	10.8	14	2	3.4	1.4	2.7
APR 12...	1210	6470	41	6.9	8.5	8	10.3	12	2	2.8	1.1	2.1
MAY 13...	1100	2450	30	7.2	14.0	7	9.1	14	0	3.5	1.3	3.4
JUL 06...	1350	1610	43	7.5	23.5	20	8.2	14	0	3.6	1.3	2.8
AUG 10...	1425	996	46	7.6	27.0	25	9.6	14	0	3.4	1.3	3.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)
OCT 12...	1.7	19	2.0	2.9	<.10	11	40	38	<.010	.19	.010	140
NOV 22...	1.1	16	4.0	3.4	<.10	11	39	40	.010	.56	.040	120
JAN 10...	.9	13	2.0	3.9	<.10	10	--	32	<.010	.71	<.010	580
FEB 23...	1.1	12	7.1	3.1	<.10	9.7	36	36	<.010	.78	.010	63
APR 12...	1.0	10	4.9	2.8	<.10	8.2	34	29	<.010	.61	<.010	64
MAY 13...	1.0	14	3.3	3.0	<.10	10	37	34	<.010	.47	<.010	59
JUL 06...	1.3	14	6.3	3.3	.20	9.8	42	37	<.010	.55	.010	120
AUG 10...	1.2	17	4.4	4.1	<.10	8.5	38	36	<.010	.13	<.010	150

< Actual value is known to be less than the value shown.

03164000 NEW RIVER NEAR GALAX, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	40	38	44					---	52	50	23
2	57	44	35	39					---	22	48	61
3	46	47	38	39					---	20	52	60
4	40	42	35	44					---	50	55	22
5	48	42	34	39					---	29	50	23
6	46	41	34	38					---	50	53	23
7	57	43	35	39					---	52	50	25
8	48	42	37	---					50	50	50	23
9	42	41	45	---					50	50	53	24
10	41	40	37	---					44	56	43	22
11	36	42	46	---					52	50	50	22
12	38	37	47	---					50	48	60	24
13	42	36	44	---					60	50	58	28
14	41	38	46	---					56	54	55	24
15	41	38	45	---					50	51	50	24
16	42	38	46	---					52	52	48	23
17	42	39	46	---					52	50	50	22
18	41	31	46	---					33	47	52	20
19	38	38	41	---					56	47	50	23
20	39	39	40	---					58	45	48	24
21	43	31	40	---					58	48	22	23
22	37	37	39	---					---	55	22	23
23	42	39	37	---					56	53	22	26
24	41	34	40	---					26	55	20	24
25	39	36	41	---					21	52	22	24
26	38	35	42	---					21	52	22	23
27	38	36	41	---					51	50	65	54
28	37	38	40	---					51	50	65	57
29	36	36	39	---					54	20	65	61
30	38	35	45	---					53	20	54	60
31	36	---	44	---					---	20	60	---
MEAN	42	39	41	40					48	45	47	31

WTR YR 1983 MEAN 41 MAX 65 MIN 20

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.5	14.5	7.0	7.0					---	25.0	24.0	27.0
2	18.0	16.0	7.5	5.5					---	26.0	26.0	27.0
3	16.5	15.5	6.0	6.0					---	26.0	26.0	27.0
4	17.0	15.0	7.0	4.5					---	25.5	28.5	26.5
5	17.5	12.5	6.5	4.0					---	25.5	25.5	27.0
6	17.0	11.0	7.0	4.5					---	24.0	26.0	27.0
7	18.0	12.0	6.0	4.0					---	23.0	25.0	28.0
8	16.5	13.0	5.0	---					20.0	25.0	25.0	28.0
9	15.5	12.5	2.5	---					22.0	25.5	28.0	27.0
10	15.0	12.0	2.0	---					22.0	24.0	27.0	27.5
11	15.5	10.5	4.0	---					23.0	27.5	27.0	27.0
12	14.5	10.0	.0	---					24.0	27.0	25.0	27.0
13	14.0	9.0	.0	---					25.0	28.0	25.0	27.0
14	13.5	8.5	.0	---					24.0	28.0	24.0	26.5
15	14.0	7.0	.0	---					22.0	28.0	25.5	26.0
16	13.0	7.5	3.0	---					23.5	27.0	25.0	26.0
17	12.0	8.0	4.5	---					23.0	27.0	27.0	26.0
18	12.5	9.5	5.0	---					23.0	27.0	27.5	26.0
19	13.0	9.0	5.5	---					24.0	27.0	28.0	26.5
20	11.5	8.5	6.5	---					24.5	29.0	29.0	26.0
21	12.0	8.0	6.0	---					24.0	30.0	29.0	26.0
22	10.5	9.0	6.5	---					23.5	29.0	30.0	24.5
23	11.0	9.5	7.5	---					24.5	28.5	29.0	24.5
24	10.0	7.5	9.0	---					24.5	28.0	28.0	20.0
25	10.5	9.0	8.5	---					24.5	25.5	26.5	22.0
26	11.5	8.0	10.0	---					25.0	25.0	27.0	20.0
27	12.0	7.5	7.5	---					27.0	26.5	28.0	22.5
28	12.5	6.0	6.0	---					27.0	26.0	28.5	22.5
29	13.0	6.5	6.5	---					26.5	26.0	28.5	23.0
30	14.0	7.0	6.5	---					23.0	26.5	28.0	23.0
31	14.0	---	6.0	---					---	26.5	28.0	---
MEAN	14.0	10.0	5.5	5.0					24.0	26.5	27.0	25.5

WTR YR 1983 MEAN 18.5 MAX 30.0 MIN .0

03165000 CHESTNUT CREEK AT GALAX, VA

LOCATION.--Lat 36°38'45", long 80°55'10", Galax City, Hydrologic Unit 05050001, on right bank 200 ft upstream from bridge on State Highway 89 and 1.7 mi downstream from Wards Mill Branch.

DRAINAGE AREA.--39.4 mi^2.

PERIOD OF RECORD.--September 1944 to current year.

REVISED RECORDS.--WSP 1385: 1953.

GAGE.--Water-stage recorder. Concrete control since Aug. 30, 1979. Datum of gage is 2,344.17 ft National Geodetic Vertical Datum of 1929. Prior to June 25, 1948, nonrecording gage, and June 25, 1948, to May 28, 1953, water-stage recorder, at site 200 ft upstream at datum 0.86 ft higher.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--39 years, 67.6 ft^3/s, 23.30 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,980 ft^3/s Oct. 17, 1947, gage height, 14.4 ft, from floodmark, site and datum then in use, from rating curve extended above 2,200 ft^3/s on basis of two slope-area and one contracted-opening measurements at gage heights 9.5 ft, 14.4 ft, and 17.4 ft, respectively, site and datum then in use; minimum, 12 ft^3/s part or all of each day Aug. 25-30, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 14, 1940, reached a stage of 17.4 ft, at site and datum used 1944-53, discharge, 11,000 ft^3/s by contracted-opening measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0415	1010	3.54	Apr. 2	1545	1860	5.33
Feb. 2	1100	2170	5.84	Apr. 10	0115	*2200	5.88
Mar. 6	1345	1470	4.56	Apr. 23	2345	1030	3.58

Minimum discharge, 23 ft^3/s Sept. 10, 11, gage height, 1.29 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	35	68	49	85	78	107	118	81	73	34	28
2	27	34	57	53	1070	73	679	114	75	64	37	28
3	27	35	59	64	234	70	324	116	81	58	35	28
4	27	152	56	54	122	67	176	120	114	68	33	28
5	28	79	163	51	94	66	149	109	79	54	33	28
6	27	52	207	50	90	578	147	103	85	52	38	27
7	27	46	85	48	80	223	185	100	89	48	38	25
8	29	43	65	47	72	168	172	102	77	48	33	25
9	34	41	58	47	70	141	478	98	71	46	33	24
10	45	40	54	52	70	125	889	94	68	45	31	24
11	36	38	55	55	70	114	267	92	66	45	30	24
12	34	49	66	48	71	101	194	91	64	43	42	26
13	55	75	54	45	64	93	164	92	63	42	33	38
14	42	47	53	44	65	90	153	98	61	42	31	41
15	34	43	92	46	67	86	262	90	68	41	31	30
16	31	41	526	43	72	82	171	121	68	40	30	28
17	30	40	125	40	82	93	150	97	73	38	30	27
18	30	43	86	38	89	260	150	87	73	38	29	27
19	30	46	76	35	82	167	146	96	83	40	28	26
20	30	46	68	40	88	117	140	125	70	41	27	26
21	31	51	61	46	95	262	130	143	64	37	27	45
22	30	47	57	201	102	137	123	168	61	37	27	41
23	29	44	56	359	293	114	258	122	60	41	28	30
24	29	42	54	148	138	107	510	100	57	46	33	29
25	168	39	55	83	110	98	196	91	54	44	40	28
26	74	38	55	68	88	91	158	93	54	42	32	28
27	47	38	52	62	79	241	143	87	53	37	32	28
28	41	57	65	62	76	158	133	83	57	36	32	27
29	38	121	59	66	---	118	126	89	58	35	29	27
30	37	61	53	103	---	108	121	87	58	34	28	28
31	35	---	51	94	---	120	---	79	---	33	27	---
TOTAL	1209	1563	2691	2241	3718	4346	7001	3205	2085	1388	991	869
MEAN	39.0	52.1	86.8	72.3	133	140	233	103	69.5	44.8	32.0	29.0
MAX	168	152	526	359	1070	578	889	168	114	73	42	45
MIN	27	34	51	35	64	66	107	79	53	33	27	24
CFSM	.99	1.32	2.20	1.84	3.38	3.55	5.91	2.61	1.76	1.14	.81	.74
IN.	1.14	1.48	2.54	2.12	3.51	4.10	6.61	3.03	1.97	1.31	.94	.82

CAL YR 1982 TOTAL 22736 MEAN 62.3 MAX 799 MIN 19 CFSM 1.58 IN 21.47
WTR YR 1983 TOTAL 31307 MEAN 85.8 MAX 1070 MIN 24 CFSM 2.18 IN 29.56

03166800 GLADE CREEK AT GRAHAMS FORGE, VA

LOCATION.--Lat 36°55'51", long 80°54'02", Wythe County, Hydrologic Unit 05050001, on right downstream abutment of bridge on State Highway 629, 1.0 mi southwest of Grahams Forge, and at mile 0.4.

DRAINAGE AREA.--7.15 mi^2.

PERIOD OF RECORD.--May 1976 to current year.

GAGE.--Water-stage recorder. Concrete control since June 1, 1979. Altitude of gage is 1,972 ft, from topographic map.

REMARKS.--Records fair. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years, 0.94 ft^3/s, 1.79 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft^3/s June 16, 1976, gage height, 5.11 ft, from rating curve extended above 60 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.02 ft^3/s Sept. 14, 1981; minimum gage height, 1.36 ft Sept. 7, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0315	*127	3.19	Apr. 10	0115	106	3.08

Minimum discharge, 0.05 ft^3/s Oct 8, 9, gage height, 1.39 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.06	2.2	.22	.38	.66	.80	.93	.46	.31	.14	.11
2	.08	.06	.81	.25	24	.53	1.0	.93	.45	.30	.14	.12
3	.08	.08	.60	.28	4.7	.46	1.3	.99	.54	.38	.15	.12
4	.08	.49	.45	.24	1.9	.41	.99	.97	.90	.32	.16	.10
5	.15	.21	.42	.24	1.4	.39	1.0	.86	.56	.24	.16	.12
6	.10	.17	.42	.24	1.0	2.1	1.1	.76	.50	.20	.15	.12
7	.10	.15	.32	.21	.85	1.4	4.7	.66	.54	.18	.14	.12
8	.06	.13	.28	.21	.74	1.2	4.8	.62	.47	.18	.18	.12
9	.11	.11	.25	.24	.68	5.3	12	.64	.41	.17	.17	.12
10	.48	.10	.22	.30	.58	4.3	24	.62	.40	.17	.15	.13
11	.12	.08	.18	.31	.59	2.5	4.7	.56	.36	.16	.19	.12
12	.09	.18	.27	.26	.52	1.6	3.0	.46	.35	.16	.25	.11
13	.40	.14	.24	.24	.50	1.1	2.2	.45	.32	.16	.16	.27
14	.15	.12	.24	.24	.46	.91	1.8	.42	.30	.16	.15	.19
15	.10	.10	.78	.24	.58	.80	1.9	.46	.28	.15	.14	.12
16	.08	.10	27	.22	.95	.68	1.4	.89	.27	.15	.12	.13
17	.08	.09	2.6	.20	1.9	.64	1.2	.61	.32	.15	.12	.14
18	.08	.11	1.3	.16	3.0	2.8	1.3	.55	.51	.18	.12	.12
19	.07	.10	.91	.18	2.4	4.1	1.3	.52	.45	.20	.11	.12
20	.06	.10	.73	.20	1.9	1.7	1.1	.51	.41	.18	.10	.12
21	.06	.10	.58	.22	1.7	4.4	.99	.74	.36	.22	.10	.17
22	.06	.12	.49	.24	1.4	2.0	.87	.87	.28	.24	.10	.16
23	.06	.11	.43	.92	2.0	1.3	4.3	.68	.28	.25	.10	.14
24	.06	.15	.38	.86	1.6	1.1	14	.55	.28	.26	.24	.12
25	.41	.12	.32	.42	1.6	.93	3.5	.49	.26	.24	.14	.12
26	.21	.11	.34	.51	1.0	.79	2.2	.46	.24	.23	.12	.12
27	.14	.10	.33	.44	.81	.91	1.7	.45	.23	.20	.12	.12
28	.11	.30	.32	.42	.72	.90	1.4	.45	.23	.18	.12	.12
29	.10	1.5	.29	.41	---	.75	1.2	.58	.26	.16	.12	.12
30	.09	.42	.24	.48	---	.63	.99	.50	.28	.15	.12	.15
31	.06	---	.22	.43	---	.93	---	.46	---	.13	.12	---
TOTAL	3.91	5.71	44.16	10.03	59.86	48.22	102.74	19.64	11.50	6.36	4.40	3.96
MEAN	.13	.19	1.42	.32	2.14	1.56	3.42	.63	.38	.21	.14	.13
MAX	.48	1.5	27	.92	24	5.3	24	.99	.90	.38	.25	.27
MIN	.06	.06	.18	.16	.38	.39	.80	.42	.23	.13	.10	.10
CFSM	.02	.03	.20	.05	.30	.22	.48	.09	.05	.03	.02	.02
IN.	.02	.03	.23	.05	.31	.25	.53	.10	.06	.03	.02	.02

CAL YR 1982 TOTAL 410.69 MEAN 1.13 MAX 75 MIN .05 CFSM .16 IN 2.14
WTR YR 1983 TOTAL 320.49 MEAN .88 MAX 27 MIN .06 CFSM .12 IN 1.67

03167000 REED CREEK AT GRAHAMS FORGE, VA

LOCATION.--Lat 36°56'22", long 80°53'13", Wythe County, Hydrologic Unit 05050001, on left bank 20 ft downstream from bridge on State Highway 619 at Grahams Forge, 2.2 mi downstream from Glade Creek, and at mile 7.3.

DRAINAGE AREA.--247 mi^2.

PERIOD OF RECORD.--July 1908 to September 1916, January 1927 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1235: 1912-13, 1915-16. WSP 1275: 1911, 1927-28(M), 1930-34(M). WSP 1705: 1913(M), 1916(M), 1957 calendar year runoff. WSP 1725: 1915 calendar year runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,924.65 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1916, nonrecording gage at same site at datum 0.68 ft lower. Feb. 3, 1927, to Oct. 28, 1934, and June 11, 1974, to July 22, 1975, nonrecording gage, at present site and datum.

REMARKS.--Records good. Occasional diurnal fluctuation at low flow caused by mills above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--64 years, 268 ft^3/s, 14.73 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft^3/s July 16, 1916, gage height, 11.4 ft, present datum, from floodmarks, from rating curve extended above 7,600 ft^3/s on basis of velocity-area study and slope-area measurement at gage heights 11.4 ft and 10.01 ft, respectively; minimum observed, about 5 ft^3/s Dec. 22, 1909, gage height, 0.49 ft, present datum, result of freezeup; minimum daily, 22 ft^3/s Jan. 30, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1830	2550	4.24	Apr. 10	1230	*2650	4.31
Feb. 2	2400	2520	4.22	Apr. 24	1600	2530	4.23

Minimum discharge, 52 ft^3/s Sept. 9, 10, 20, gage height, 1.35 ft; minimum daily, 69 ft^3/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	99	829	245	376	443	483	412	224	125	90	79
2	79	96	1050	236	1230	401	496	381	214	122	95	78
3	77	96	677	236	1720	359	694	367	202	158	95	79
4	75	189	507	219	877	327	641	388	287	186	98	77
5	91	450	416	204	599	304	565	346	385	137	91	78
6	125	290	365	196	514	538	567	312	279	128	95	75
7	94	215	305	192	448	1370	567	293	245	121	90	73
8	86	178	267	187	385	847	647	284	225	115	86	73
9	89	156	245	188	333	823	663	281	206	111	96	72
10	159	142	228	195	324	808	2310	264	192	109	92	70
11	249	132	219	215	324	656	1420	252	183	107	86	70
12	142	128	240	268	295	564	980	242	176	104	104	69
13	149	159	223	267	278	499	768	237	167	103	98	83
14	189	178	196	246	269	461	640	237	161	102	89	103
15	156	163	208	237	274	430	608	231	160	99	84	87
16	128	152	1730	227	340	393	530	257	178	99	83	78
17	113	139	1440	206	636	362	472	392	178	99	82	75
18	104	145	809	198	913	707	456	325	182	96	80	74
19	99	156	609	172	793	1990	449	295	186	99	79	72
20	96	163	515	150	687	1230	417	368	166	96	77	72
21	94	182	437	170	635	1400	395	540	158	97	76	75
22	91	219	371	185	617	1480	378	706	152	101	85	79
23	91	384	340	212	674	974	410	674	145	113	88	74
24	89	371	340	216	651	767	1980	489	139	110	88	72
25	113	397	390	201	717	643	1430	384	133	112	113	73
26	163	322	423	194	661	537	916	326	128	112	108	73
27	145	267	371	199	543	512	703	286	127	100	95	73
28	122	267	328	212	482	528	581	260	122	95	102	72
29	113	1160	305	238	---	485	505	262	125	92	91	71
30	104	932	281	283	---	450	451	263	131	90	87	72
31	102	---	258	351	---	477	---	246	---	89	83	---
TOTAL	3606	7927	14922	6745	16595	21765	22122	10600	5556	3427	2806	2271
MEAN	116	264	481	218	593	702	737	342	185	111	90.5	75.7
MAX	249	1160	1730	351	1720	1990	2310	706	385	186	113	103
MIN	75	96	196	150	269	304	378	231	122	89	76	69
CFSM	.47	1.07	1.95	.88	2.40	2.84	2.98	1.39	.75	.45	.37	.31
IN.	.54	1.19	2.25	1.02	2.50	3.28	3.33	1.60	.84	.52	.42	.34

CAL YR 1982	TOTAL	110118	MEAN 302	MAX 2450	MIN 64	CFSM 1.22	IN 16.58
WTR YR 1983	TOTAL	118342	MEAN 324	MAX 2310	MIN 69	CFSM 1.31	IN 17.82

03167500 BIG REED ISLAND CREEK NEAR ALLISONIA, VA

LOCATION.--Lat 36°53'20", long 80°43'40", Pulaski County, Hydrologic Unit 05050001, on left bank 700 ft downstream from bridge on State Highway 693, 3.5 mi southeast of Allisonia, 4 mi upstream from Little Reed Island Creek, and at mile 4.5.

DRAINAGE AREA.--278 mi².

PERIOD OF RECORD.--August 1908 to September 1916, April 1939 to current year.

REVISED RECORDS.--WSP 1033: 1939(P), 1940, 1941-43(P). WSP 1305: 1912(M). WSP 1625: 1940, 1945(M), 1947, 1951, 1952(M).

GAGE.--Water-stage recorder. Datum of gage is 1,902.74 ft National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1916, nonrecording gage at site 4 mi downstream at different datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 401 ft³/s, 19.59 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s Sept. 30, 1959, gage height, 12.54 ft, from rating curve extended above 6,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 63 ft³/s Jan. 20, 1971, gage height, 1.63 ft, result of freezeup; minimum daily, 75 ft³/s Jan. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1030	4940	6.94	Apr. 10	0730	*11600	11.04
Feb. 2	1900	4070	6.31	Apr. 24	0730	4710	6.77

[illegible]imum discharge, 98 ft³/s Jan. 19, gage height, 1.84 ft, result of freezeup; minimum daily, 130 ft³/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	183	422	317	441	441	601	689	485	409	218	163
2	157	180	453	312	1970	446	899	665	485	415	248	160
3	153	179	369	374	1360	404	1770	658	462	390	239	163
4	151	712	352	342	714	385	886	727	772	385	218	160
5	159	871	353	312	529	369	727	645	620	541	210	160
6	169	402	782	308	507	485	683	607	607	415	222	154
7	159	319	476	298	462	645	899	588	1120	342	214	146
8	159	280	368	294	430	570	1020	576	689	317	199	140
9	176	245	317	289	380	683	1060	607	524	303	192	138
10	239	211	283	303	404	626	7050	558	479	294	182	132
11	242	203	282	369	374	595	1710	541	457	294	188	130
12	197	210	389	332	390	507	1130	529	441	284	322	143
13	233	527	328	289	385	462	919	529	420	271	261	218
14	361	340	299	284	364	435	805	529	420	266	210	214
15	223	268	364	303	342	415	1230	547	496	257	199	192
16	186	237	2800	261	415	395	1190	683	529	252	192	163
17	171	224	1030	222	512	380	906	733	485	252	185	154
18	166	230	645	210	595	860	846	558	468	244	178	149
19	166	234	518	170	541	1120	812	541	512	239	175	143
20	166	225	462	257	541	701	772	791	529	235	166	138
21	178	228	425	294	547	1000	772	892	671	235	166	284
22	177	246	380	308	576	798	714	960	474	235	178	468
23	165	240	374	708	879	620	752	879	446	353	185	222
24	162	237	358	873	846	547	3010	683	404	385	257	182
25	440	229	353	485	665	501	1350	613	380	457	231	172
26	644	214	358	385	535	462	966	535	358	317	203	169
27	301	212	342	385	474	695	846	512	353	275	185	166
28	233	231	353	374	451	1080	778	501	342	248	192	163
29	208	740	435	385	---	683	733	529	524	235	210	157
30	195	481	358	420	---	576	701	613	415	227	175	157
31	187	---	327	535	---	626	---	524	---	222	166	---
TOTAL	6683	9338	15355	10998	16629	18512	36537	19542	15367	9594	6366	5300
MEAN	216	311	495	355	594	597	1218	630	512	309	205	177
MAX	644	871	2800	873	1970	1120	7050	960	1120	541	322	468
MIN	151	179	282	170	342	369	601	501	342	222	166	130
CFSM	.78	1.12	1.78	1.28	2.14	2.15	4.38	2.27	1.84	1.11	.74	.64
IN.	.89	1.25	2.05	1.47	2.23	2.48	4.89	2.61	2.06	1.28	.85	.71

CAL YR 1982 TOTAL 151883 MEAN 416 MAX 3070 MIN 100 CFSM 1.50 IN 20.32
WTR YR 1983 TOTAL 170221 MEAN 466 MAX 7050 MIN 130 CFSM 1.68 IN 22.78

03168000 NEW RIVER AT ALLISONIA, VA

LOCATION.--Lat 36°56'15", long 80°44'45", Pulaski County, Hydrologic Unit 05050001, on left bank on State Highway 653, 0.2 mi downstream from Big Reed Island Creek, and 0.5 mi upstream from Allisonia.

DRAINAGE AREA.--2,202 mi².

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 783: Drainage area. WSP 823: 1936. WSP 1305: 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 1,848.36 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Large diurnal fluctuation and some regulation by powerplant 25 mi above station. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--54 years, 3,216 ft³/s, 19.83 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 185,000 ft³/s Aug. 14, 1940, gage height, 23.42 ft, from rating curve extended above 52,000 ft³/s on basis of flood records for other stations on New River; minimum, 412 ft³/s Sept. 7, 1930, gage height, 0.47 ft; minimum daily, 453 ft³/s Sept. 6, 1930.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 17,500 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 3	0030	43000	9.38	Apr. 10	0915	*44300	9.55
Mar. 7	1315	18900	5.79	Apr. 24	1715	20900	6.11
Mar. 19	0430	31800	7.78				

Minimum discharge, 664 ft³/s Sept. 9, 10, gage height, 0.94 ft; minimum daily, 813 ft³/s Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1280	1710	6170	2710	4990	4370	5880	5520	3450	2650	1570	1160
2	934	1540	6620	2780	16500	4430	6500	5320	3360	2380	1370	1300
3	1010	1590	5670	3200	32900	4020	15100	5190	3560	2600	1520	947
4	1310	2840	4570	3110	13800	3890	10900	5130	4100	2580	1460	1440
5	1180	5560	4100	3060	8340	3040	8300	5100	4220	3080	1460	1540
6	1200	4220	5970	2900	6520	5130	7460	4760	4310	2560	1210	1410
7	1120	2970	6170	2570	5570	16400	7660	4190	5480	2340	1410	977
8	1190	2830	4890	2380	4770	11200	9050	4290	4290	2240	1730	1230
9	980	2230	3790	2520	4220	9400	8950	4510	3910	1740	1680	813
10	1670	2000	3130	2670	4080	7910	33100	4110	3380	1920	1390	865
11	2480	1770	2800	2890	3840	6820	17900	3980	2840	2270	1390	977
12	1800	1860	3730	3270	3780	6120	12100	3780	2910	1640	1690	1020
13	1870	2370	3120	3150	3710	5270	9690	3770	3050	1980	1290	1340
14	2370	2910	2900	2970	3540	5040	8180	3930	2750	1670	1560	1680
15	2340	2840	2810	2610	3350	4760	8500	3820	2960	1810	1420	2110
16	1470	2210	12300	2510	3560	4250	8930	4400	3130	1620	1360	1340
17	1560	1950	13200	2330	4270	4320	7280	5270	2930	1560	1340	879
18	1770	1880	8060	1990	5520	13200	6770	4930	3060	1620	1300	1140
19	1390	2060	5970	1900	5560	26600	6440	4060	3510	1740	1220	1400
20	1290	2170	5130	1740	5110	14500	6300	4750	3780	1570	922	1010
21	1380	2350	4360	1790	4870	13100	5860	6540	3270	1730	1130	1100
22	1310	2450	3530	1830	5120	13400	5770	8280	3560	1450	1580	1470
23	1110	2690	3650	3900	6160	9940	5640	8170	2800	1410	1270	1650
24	1240	2690	3280	7660	8670	8030	17200	6480	2780	1770	1380	1040
25	2690	2580	3200	4900	7580	6930	15100	5470	2270	2350	2020	994
26	3840	2810	3340	3530	6310	5990	10700	4900	2470	1750	1630	1400
27	3570	2550	3690	3290	5360	5940	8580	4450	2650	2000	1640	1080
28	2600	2620	3380	3070	4790	8370	7220	3990	2470	1730	1710	899
29	2010	5830	3120	3150	---	7660	6480	4080	2870	1540	1850	956
30	1500	8410	3460	3420	---	6260	6070	4010	2590	1230	1540	1070
31	1520	---	3040	4590	---	5880	---	4110	---	1330	1360	---
TOTAL	52984	84490	149150	94390	192790	252170	293610	151290	98710	59860	45402	36237
MEAN	1709	2816	4811	3045	6885	8135	9787	4880	3290	1931	1465	1208
MAX	3840	8410	13200	7660	32900	26600	33100	8280	5480	3080	2020	2110
MIN	934	1540	2800	1740	3350	3040	5640	3770	2270	1230	922	813
CFSM	.78	1.28	2.19	1.38	3.13	3.69	4.45	2.22	1.49	.88	.67	.55
IN.	.90	1.43	2.52	1.59	3.26	4.26	4.96	2.56	1.67	1.01	.77	.61

CAL YR 1982 TOTAL 1203044 MEAN 3296 MAX 23600 MIN 934 CFSM 1.50 IN 20.32
WTR YR 1983 TOTAL 1511083 MEAN 4140 MAX 33100 MIN 813 CFSM 1.88 IN 25.53

03169000 CLAYTOR RESERVOIR NEAR RADFORD, VA

LOCATION.--Lat 37°04'28", long 80°35'05", Pulaski County, Hydrologic Unit 05050001, at Claytor Dam on New River, 0.5 mi upstream from Little River, and 5.5 mi upstream from Radford.

DRAINAGE AREA.--2,382 mi².

PERIOD OF RECORD.--May 1939 to current year (monthly figures only).

REVISED RECORDS.--WSP 2108: 1961-65 monthend contents and change in contents.

GAGE.--Water-stage recorder. Datum of gage is approximately National Geodetic Vertical Datum of 1929 (levels by Appalachian Power Co.). Prior to Sept. 11, 1943, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by gravity overflow concrete dam. Spillway with crest at elevation 1,818.5 ft is equipped with 9 lift gates 30 ft high by 50 ft wide. Dam completed and storage began May 22, 1939; water in reservoir reached minimum pool elevation in January 1940. Total level-pool capacity at elevation 1,847.0 ft, 1.5 ft below top of gates, is 230,100 acre-ft of which about 100,000 acre-ft is controlled storage above minimum pool elevation of 1,820.0 ft. Reservoir is used for hydroelectric power and recreation.

COOPERATION.--Records furnished by Appalachian Power Co.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1844.85	220600	
Oct. 31	1844.83	220500	-100
Nov. 30	1844.41	218700	-1800
Dec. 31	1844.13	217500	-1200
CAL YR 1982			-3500
Jan. 31	1845.05	221400	+3900
Feb. 28	1844.42	218700	-2700
Mar. 31	1844.10	217400	-1300
Apr. 30	1844.01	217000	-400
May 31	1844.87	220700	+3700
June 30	1845.20	222100	+1400
July 31	1844.91	220800	-1300
Aug. 31	1845.39	222900	+2100
Sept. 30	1845.64	224000	+1100
WTR YR 1983			+3400

03170000 LITTLE RIVER AT GRAYSONTON, VA

LOCATION.--Lat 37°02'15", long 80°33'25", Pulaski County, Hydrologic Unit 05050001, on left bank at upstream side of bridge on State Highway 693 at Snowville, 0.5 mi southeast of Graysonton, 7 mi south of Radford, and at mile 8.6.

DRAINAGE AREA.--300 mi².

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 823: 1929-36. WSP 1143: 1945. WSP 1305: 1929(M). WSP 1555: Drainage area (at site used 1928-41). WSP 1625: 1951(M). WSP 1725: 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 1,816.04 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 20, 1931, nonrecording gage at bridge 1.0 mi downstream at datum 17.99 ft lower. Nov. 20, 1931, to Nov. 12, 1941, water-stage recorder 1.2 mi downstream at datum 20.58 ft lower.

REMARKS.--Records fair. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--55 years, 363 ft³/s, 16.43 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s June 21, 1972, gage height, 13.40 ft, from rating curve extended above 16,000 ft³/s on basis of slope-area measurements at gage heights 12.76 ft and 13.40 ft; minimum, 21 ft³/s Feb. 22, 1942, result of freezeup; minimum daily, 50 ft³/s Sept. 21, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Apr. 10	1015	*12800	9.39	Apr. 24	1030	4840	5.25

Minimum daily discharge, 102 ft³/s Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	161	366	202	260	448	658	702	418	310	165	128
2	115	154	425	203	706	474	635	679	421	318	171	135
3	115	150	328	213	1340	436	1870	667	401	289	178	127
4	110	194	290	213	659	414	947	718	526	300	169	129
5	120	660	270	199	468	396	760	648	552	279	160	123
6	130	295	336	198	456	419	710	600	436	281	159	120
7	140	221	327	196	431	602	705	575	576	260	180	113
8	136	199	266	192	389	499	887	568	464	246	180	108
9	143	184	246	192	356	585	855	573	397	240	157	107
10	179	175	235	199	387	591	8090	547	369	237	146	106
11	191	167	230	260	298	639	2110	535	354	236	144	104
12	176	170	264	244	289	554	1340	526	340	233	180	102
13	179	275	253	212	447	492	1060	520	330	223	186	135
14	276	271	212	191	386	460	924	528	322	219	155	186
15	227	220	248	214	346	437	1070	561	380	213	147	182
16	171	204	1450	176	414	416	1320	695	362	206	143	151
17	150	195	767	145	488	404	936	721	353	203	138	135
18	139	201	423	130	578	1140	865	543	435	196	134	130
19	138	209	336	120	544	2170	853	510	550	193	130	124
20	139	204	301	150	547	1010	790	558	557	190	127	120
21	142	213	278	178	577	1010	747	616	483	186	122	138
22	146	224	247	182	625	896	699	716	376	181	121	217
23	142	220	247	227	846	710	715	617	355	214	130	185
24	137	214	239	410	966	637	3260	536	324	301	149	147
25	158	206	232	336	711	601	1640	474	300	262	169	139
26	572	195	230	249	574	569	1110	451	286	221	194	137
27	341	191	225	276	491	566	923	433	278	205	157	137
28	216	206	220	286	457	928	832	416	273	188	146	135
29	191	655	226	264	---	688	765	457	280	178	154	132
30	176	506	214	277	---	605	727	508	291	172	137	134
31	168	---	204	294	---	626	---	475	---	169	127	---
TOTAL	5483	7339	10135	6828	15036	20422	38803	17673	11789	7149	4755	4066
MEAN	177	245	327	220	537	659	1293	570	393	231	153	136
MAX	572	660	1450	410	1340	2170	8090	721	576	318	194	217
MIN	110	150	204	120	260	396	635	416	273	169	121	102
CFSM	.59	.82	1.09	.73	1.79	2.20	4.31	1.90	1.31	.77	.51	.45
IN.	.68	.91	1.26	.85	1.86	2.53	4.81	2.19	1.46	.89	.59	.50

CAL YR 1982 TOTAL 123232 MEAN 338 MAX 3000 MIN 85 CFSM 1.13 IN 15.28
WTR YR 1983 TOTAL 149478 MEAN 410 MAX 8090 MIN 102 CFSM 1.37 IN 18.54

03171000 NEW RIVER AT RADFORD, VA

LOCATION.--Lat 37°08'30", long 80°34'10", Pulaski County, Hydrologic Unit 05050001, on left bank 2,000 ft downstream from bridge on U.S. Highway 11 at Radford, 5 mi downstream from Little River, and 5.5 mi downstream from Claytor Dam.

DRAINAGE AREA.--2,748 mi^2.

PERIOD OF RECORD.--October 1907 to September 1915, August 1939 to current year. Records for August 1898 to September 1907, published in WSP 27, 36, 48, 65, 83, 98, 128, 169, 205, 243, and 536, are unreliable and should not be used. Gage-height records collected at same site since 1895 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 873: Drainage area. WSP 953: 1940-41. WSP 1305: 1908-12. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,712.16 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 30, 1939, nonrecording gage at highway bridge 2,000 ft upstream at datum 0.85 ft lower.

REMARKS.--Records good. Flow regulated since 1939 by Claytor Reservoir (station 03169000). Some additional regulation at low flow by dam and powerplant on Little River. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 3,870 ft^3/s, 19.12 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 218,000 ft^3/s Aug. 14, 1940, gage height, 35.96 ft, from rating curve extended above 76,000 ft^3/s on basis of records for other stations on New River and flow over Claytor Dam, computed by Appalachian Power Company; minimum, 165 ft^3/s Aug. 25, 27, 1944, gage height, 1.08 ft; minimum daily, 550 ft^3/s Aug. 22, 1911.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 16, 1916, reached a stage of 35.7 ft, discharge, 200,000 ft^3/s, at site and datum used by Geological Survey 1907-15, from reports of the National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 47,700 ft^3/s Apr. 10, gage height, 13.79 ft; minimum, 539 ft^3/s Aug. 22, gage height, 1.62 ft; minimum daily, 772 ft^3/s Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1830	2020	10300	1500	8780	6010	6680	4180	4140	4640	1540	2280
2	1120	1880	6950	1550	12900	5430	8200	6010	4030	1440	1660	2330
3	1130	1850	6770	5060	33300	5920	13400	7190	5170	2660	1020	920
4	1220	5350	3190	4450	16700	5090	12300	7970	4100	4210	1490	830
5	1200	5670	5380	4260	12100	2330	12100	6280	3710	3670	3230	1840
6	1270	3660	5930	3400	11300	7230	11800	5920	5790	3960	1140	2080
7	1420	2090	6170	3630	6770	12800	9320	4960	6930	3990	772	1540
8	1730	3420	5410	1980	5650	11500	12600	2810	5700	4100	1660	1520
9	1080	3070	5090	1100	4370	11200	12400	6200	4960	1190	2220	1310
10	1670	3190	4710	3900	6010	11800	35400	6480	5560	1120	2570	850
11	2650	3220	1210	3830	6440	12200	22300	5220	3880	2540	2250	969
12	2310	2220	2870	4080	5790	5610	14300	4680	1330	2600	1930	830
13	4510	1180	4390	3940	4880	3200	12700	4560	4330	2600	1020	994
14	3840	2000	4600	3990	4560	6680	12100	3920	4070	1900	944	2000
15	3550	4680	4320	2300	4250	6770	11500	3810	4330	2140	1840	2450
16	1130	3390	10600	1140	3500	6280	9180	7230	3400	1050	1980	2140
17	1040	3570	13300	3400	3850	8110	9180	7020	3960	1020	1930	994
18	2290	3330	12500	3600	5090	13600	7620	5830	4920	2420	1870	969
19	1780	2280	8840	3710	6480	24100	8240	5260	2220	2450	2160	2140
20	1550	1100	6420	2080	5050	15900	7310	5830	4760	2300	920	1380
21	1680	1110	5560	2180	6150	15200	6680	8340	5430	2390	850	1690
22	1330	4670	5090	1120	8110	15700	8240	9620	5390	3230	2220	1240
23	1140	3620	4100	2620	12000	12100	9420	7530	5610	1120	2030	1600
24	950	3650	3490	8100	8750	11000	15600	8200	4330	1210	2160	994
25	5460	1050	2550	6140	7400	8890	18000	5430	1280	2900	1810	969
26	4410	2930	2880	4080	6110	7230	13200	6520	1210	3130	1750	1460
27	3430	2630	3700	4000	4760	10400	11900	5520	4370	3470	896	1260
28	3800	2820	6260	4500	7710	9130	11200	6400	3330	3400	873	1360
29	3300	8900	4920	2280	---	8020	8940	4140	2840	2110	2710	1310
30	1220	9920	4900	2910	---	7750	8940	5560	3060	994	2570	1980
31	930	---	2890	6450	---	8200	---	4480	---	969	1780	---
TOTAL	65970	100470	175290	107280	228760	295380	360750	183100	124140	76923	53795	44229
MEAN	2128	3349	5655	3461	8170	9528	12030	5906	4138	2481	1735	1474
MAX	5460	9920	13300	8100	33300	24100	35400	9620	6930	4640	3230	2450
MIN	930	1050	1210	1100	3500	2330	6680	2810	1210	969	772	830
(*)	-1	-30	-20	+64	-49	-22	-6	+60	+24	-20	+33	+18
MEAN‡	2127	3319	5635	3525	8121	9506	12020	5966	4162	2461	1768	1492
CFSM‡	.77	1.21	2.05	1.28	2.96	3.46	4.37	2.17	1.51	.90	.64	.54
IN‡	.89	1.35	2.36	1.48	3.08	3.99	4.88	2.50	1.69	1.03	.74	.61

CAL YR 1982 TOTAL 1423171 MEAN 3899 MAX 27700 MIN 904 MEAN‡ 3894 CFSM‡ 1.42 IN‡ 19.24
WTR YR 1983 TOTAL 1816087 MEAN 4976 MAX 35400 MIN 772 MEAN‡ 4981 CFSM‡ 1.81 IN‡ 24.61

* Change in contents, equivalent in cubic feet per second, in Claytor Reservoir; furnished by Appalachian Power Co.
‡ Adjusted for change in contents.

03173000 WALKER CREEK AT BANE, VA

LOCATION.--Lat 37°16'05", long 80°42'35", Giles County, Hydrologic Unit 05050002, on left bank at Bane, 0.2 mi downstream from bridge on State Highway 100, 0.2 mi downstream from Sugar Run, and at mile 7.9.

DRAINAGE AREA.--305 mi².

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS.--WSP 1143: 1939(M), 1940, 1944, 1946. WSP 1305: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 1,665.92 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality record for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--45 years, 327 ft³/s, 14.56 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s Apr. 5, 1977, gage height, 16.69 ft, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement at gage height 16.50 ft; minimum, 15 ft³/s Dec. 21, 1958, gage height, 2.42 ft, result of freezeup; minimum daily, 24 ft³/s Sept. 27, 28, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1878 reached a stage of about 23.5 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1600	4530	9.52	Apr. 10	1200	*4710	9.66
Feb. 2	2230	4550	9.54	Apr. 24	1330	4010	9.13

Minimum discharge, 39 ft³/s Sept. 23, gage height, 2.81 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	80	813	268	372	475	550	470	217	99	62	57
2	54	76	1040	251	1480	431	568	426	206	96	63	50
3	52	78	719	242	2500	383	1260	399	194	92	73	48
4	51	178	543	225	1150	342	980	407	243	100	71	47
5	61	428	440	205	747	314	768	369	358	106	73	47
6	87	300	387	195	603	741	684	327	278	95	67	45
7	87	226	319	189	516	2230	653	301	292	90	61	44
8	118	185	270	182	434	1230	822	288	261	83	64	44
9	123	156	239	176	362	1010	808	281	225	79	60	43
10	98	137	219	178	353	985	3330	262	199	77	55	41
11	102	123	207	193	329	835	1950	246	180	74	55	41
12	102	117	225	216	318	721	1210	234	164	73	62	44
13	100	129	206	212	288	628	897	225	151	72	67	94
14	121	155	170	205	268	585	720	219	141	69	67	77
15	113	140	195	209	271	554	679	212	133	67	59	61
16	91	131	2600	202	328	505	651	226	131	65	54	51
17	79	123	2010	174	619	456	591	382	153	63	53	48
18	73	122	1040	150	988	530	557	344	215	62	53	46
19	69	123	732	128	895	1760	531	305	227	61	52	45
20	67	121	590	148	779	1360	473	368	215	60	50	44
21	67	122	488	160	715	2260	432	478	200	63	48	47
22	66	137	401	157	710	2140	407	640	167	69	48	45
23	65	255	365	179	839	1240	418	546	143	77	55	40
24	63	327	360	207	897	919	2730	466	130	93	49	47
25	84	377	439	208	832	741	2200	395	118	98	52	45
26	197	321	510	200	717	599	1320	342	109	88	57	44
27	162	273	455	205	590	544	945	300	102	75	65	43
28	123	255	408	220	520	606	745	266	97	68	62	43
29	104	1140	377	239	---	581	616	260	98	63	72	43
30	93	1000	334	278	---	530	531	259	99	61	59	44
31	86	---	293	331	---	534	---	244	---	59	56	---
TOTAL	2814	7335	17394	6332	19420	26769	29026	10487	5446	2397	1844	1458
MEAN	90.8	245	561	204	694	864	968	338	182	77.3	59.5	48.6
MAX	197	1140	2600	331	2500	2260	3330	640	358	106	73	94
MIN	51	76	170	128	268	314	407	212	97	59	48	40
CFSM	.30	.80	1.84	.67	2.28	2.83	3.17	1.11	.60	.25	.20	.16
IN.	.34	.89	2.12	.77	2.37	3.26	3.54	1.28	.66	.29	.22	.18

CAL YR 1982 TOTAL 128135 MEAN 351 MAX 3550 MIN 49 CFSM 1.15 IN 15.63
WTR YR 1983 TOTAL 130722 MEAN 358 MAX 3330 MIN 40 CFSM 1.17 IN 15.94

03175500 WOLF CREEK NEAR NARROWS, VA

LOCATION.--Lat 37°18'20", long 80°51'00", Giles County, Hydrologic Unit 05050002, on right bank at downstream side of bridge on State Highway 724, 2.8 mi southwest of Narrows, and at mile 3.5.

DRAINAGE AREA.--223 mi².

PERIOD OF RECORD.--July 1908 to September 1916, March 1938 to current year.

REVISED RECORDS.--WSP 973: 1940-41(M). WSP 1235: 1912-13, 1915-16. WSP 1505: 1940, monthly and yearly runoff. WSP 1725: 1913(M), 1915-16(M), 1941 calendar year runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,583.83 ft National Geodetic Vertical Datum of 1929. July 22, 1908, to Sept. 30, 1916, and Mar. 31 to Nov. 7, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--53 years, 300 ft³/s, 18.27 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s Jan. 29, 1957, gage height, 12.55 ft, from floodmark in gage well, 13.8 ft, from floodmark at downstream side of bridge, from rating curve extended above 5,700 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 8.8 ft³/s Dec. 25, 1953, result of freezeup; minimum daily, 16 ft³/s Sept. 17, 18, 26-28, 1964; minimum gage height, 2.19 ft Dec. 24, 1943.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1400	2640	7.10	Apr. 10	0900	2490	6.95
Mar. 21	1530	*2650	7.11	Apr. 24	1330	2460	6.92

Minimum daily discharge, 23 ft³/s Sept. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	88	946	309	369	464	366	424	182	97	39	45
2	47	84	1000	278	845	422	402	379	169	88	43	42
3	46	84	770	263	1360	378	814	349	158	84	52	38
4	45	212	606	233	864	342	696	385	319	108	40	36
5	45	472	499	212	629	317	614	339	384	104	50	35
6	110	343	443	200	539	535	606	306	295	100	47	34
7	78	255	361	192	463	1120	575	282	267	84	45	33
8	62	206	299	182	385	832	566	273	236	74	42	31
9	60	175	264	172	321	733	576	270	201	68	39	30
10	124	154	241	175	309	690	2050	241	176	63	38	29
11	172	137	229	190	300	650	1460	223	157	60	35	28
12	124	130	256	210	272	587	1000	209	144	58	45	27
13	125	194	215	199	242	543	769	202	132	55	60	29
14	226	215	194	189	238	545	635	195	123	53	50	45
15	193	199	209	205	240	541	604	187	135	51	45	35
16	153	181	1730	186	305	508	550	268	185	49	39	29
17	127	165	1450	167	555	460	496	488	217	47	36	28
18	111	161	897	140	773	522	468	407	261	45	34	27
19	101	155	682	117	704	1360	443	364	341	45	32	25
20	92	147	587	135	627	1170	393	365	645	44	31	24
21	91	148	489	154	597	1950	365	346	347	44	27	23
22	95	181	397	155	600	1710	342	363	251	43	28	40
23	84	407	365	172	736	1100	350	370	198	50	35	55
24	80	494	458	190	840	835	1920	362	162	58	38	38
25	97	512	668	184	774	668	1800	324	139	64	42	30
26	149	441	661	171	646	545	1180	291	122	70	54	26
27	132	370	595	175	552	487	857	262	112	50	100	25
28	116	379	529	187	501	472	678	233	103	45	60	25
29	108	1320	470	208	---	405	565	224	109	40	65	26
30	101	1080	401	248	---	363	485	229	111	38	58	29
31	95	---	346	352	---	370	---	205	---	36	50	---
TOTAL	3239	9089	17257	6150	15586	21624	22625	9365	6381	1915	1399	967
MEAN	104	303	557	198	557	698	754	302	213	61.8	45.1	32.2
MAX	226	1320	1730	352	1360	1950	2050	488	645	108	100	55
MIN	45	84	194	117	238	317	342	187	103	36	27	23
CFSM	.47	1.36	2.50	.89	2.50	3.13	3.38	1.35	.96	.28	.20	.14
IN.	.54	1.52	2.88	1.03	2.60	3.61	3.77	1.56	1.06	.32	.23	.16

CAL YR 1982 TOTAL 131533 MEAN 360 MAX 4210 MIN 45 CFSM 1.61 IN 21.94
WTR YR 1983 TOTAL 115597 MEAN 317 MAX 2050 MIN 23 CFSM 1.42 IN 19.28

03176500 NEW RIVER AT GLEN LYN, VA
(National stream-quality accounting network station)

LOCATION.--Lat 37°22'22", long 80°51'39", Giles County, Hydrologic Unit 05050002, on right bank at upstream side of bridge on U.S. Highway 460 at Glen Lyn, 0.3 mi upstream from East River, and 6.3 mi downstream from Wolf Creek.

DRAINAGE AREA.--3,768 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1927 to current year.

REVISED RECORDS.--WSP 758: Drainage area. WSP 1305: 1928(M), 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 1,490.24 ft National Geodetic Vertical Datum of 1929. Aug. 11, 1927, to Oct. 16, 1934, on left bank just upstream from highway bridge at same datum, and Oct. 17, 1934, to June 16, 1939, on left bank 200 ft upstream from highway bridge at same datum.

REMARKS.--Records good. Flow regulated since 1939 by Claytor Reservoir (station 03169000) 55 mi above station. Corps of Engineers satellite and gage-height telemeters at station.

AVERAGE DISCHARGE.--56 years, 5,005 ft^3/s, 18.04 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 226,000 ft^3/s Aug. 14, 1940, gage height, 27.50 ft, from rating curve extended above 89,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 717 ft^3/s Jan. 5, 1981, result of freezeup; minimum daily, 820 ft^3/s Sept. 8, 1930; minimum gage height, 2.10 ft Sept. 8, 1930.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57,100 ft^3/s Apr. 10, gage height, 12.96 ft; minimum, 1,020 ft^3/s Aug. 22, gage height, 2.98 ft; minimum daily, 1,110 ft^3/s Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1870	1310	13800	3850	8640	7690	8300	8890	5100	3040	1330	2030
2	1870	2430	11200	2360	11900	7410	8970	5350	4920	4850	1900	2390
3	1250	2090	9240	2340	35200	6860	15300	7690	4770	1860	2030	2460
4	1230	2350	8570	5870	24000	7070	14900	9660	6200	2930	1550	1330
5	1330	7030	4880	5060	14200	6120	13400	8370	6000	4330	1860	1310
6	1380	6340	6730	4950	12800	4080	13600	7270	4260	3810	3330	2160
7	1390	4410	7500	4000	9780	15700	10800	7110	7760	4080	1700	2180
8	1570	2570	7060	4200	7550	14700	14200	5960	7230	4120	1170	1760
9	1900	3810	5960	3000	6200	13400	14000	4440	6200	4150	1760	1780
10	1490	3480	5780	2000	5540	13800	34700	6770	5610	1700	2250	1550
11	1990	3540	5540	1500	7940	13900	37000	7370	6200	1480	2660	1260
12	2940	3550	2190	4000	7760	10600	19800	5960	4330	2610	2540	1220
13	2790	2780	3550	4200	6240	7030	15200	5460	2030	2690	2250	1330
14	4970	1640	4910	4500	5610	6200	13800	5390	4700	2690	1630	1570
15	4320	2380	5270	1700	5350	8930	13600	5030	4580	2090	1380	2270
16	3970	5080	13300	4430	5390	8190	11400	4920	4950	2300	2050	2640
17	1480	3790	20500	4500	5540	8010	11600	8890	4010	1550	2050	2440
18	1300	4000	16100	4760	6810	12600	9350	8340	4740	1360	2030	1520
19	2420	3700	14200	4560	8120	26700	10400	6320	5880	2440	1980	1310
20	1950	2750	7900	4640	8970	22800	8820	6690	3420	2590	2230	2250
21	1640	1530	7810	2900	7550	19900	8590	8520	5500	2490	1260	1800
22	1750	1540	6930	1570	8930	22800	8590	11000	6040	2540	1110	2050
23	1480	5340	6420	3560	13300	16500	10200	10100	5650	3520	2300	1680
24	1270	4760	5470	4830	12400	13500	19400	9160	5840	1920	2230	1920
25	1160	4920	5180	8100	10800	11400	25200	9550	4470	1760	2300	1450
26	6380	2270	4530	6140	8970	9740	17900	6240	1700	3090	2010	1230
27	4480	3800	4340	4640	7760	10900	14700	7070	1570	3270	1940	1640
28	3780	3580	5600	4590	8740	11500	13000	6600	4260	3580	1430	1570
29	4150	8450	7060	5240	---	9700	11000	7440	3490	3490	1290	1630
30	3650	13300	6130	3140	---	9430	10800	4620	2870	2370	3210	1610
31	1640	---	5990	4210	---	9820	---	6730	---	1500	2590	---
TOTAL	74790	118520	239640	125340	281990	366980	438520	222910	144280	86200	61350	53340
MEAN	2413	3951	7730	4043	10070	11840	14620	7191	4809	2781	1979	1778
MAX	6390	13300	20500	8100	35200	26700	37000	11000	7760	4850	3330	2640
MIN	1160	1310	2190	1500	5350	4080	8300	4440	1570	1360	1110	1220
(*)	-1	-30	-20	+64	-49	-22	-6	+60	+24	-20	+33	+18
MEAN‡	2412	3921	7710	4107	10020	11820	14610	7251	4833	2761	2012	1796
CFSM‡	.64	1.04	2.05	1.09	2.66	3.14	3.88	1.92	1.28	.73	.53	.48
IN‡	.74	1.16	2.36	1.26	2.77	3.62	4.33	2.22	1.43	.84	.62	.53

CAL YR 1982 TOTAL 1880680 MEAN 5153 MAX 40800 MIN 1040 MEAN‡ 5148 CFSM‡ 1.37 IN‡ 18.55
WTR YR 1983 TOTAL 2213860 MEAN 6065 MAX 37000 MIN 1110 MEAN‡ 6070 CFSM‡ 1.61 IN‡ 21.87

* Change in contents, equivalent in cubic feet per second, in Claytor Reservoir; furnished by Appalachian Power Co.
‡ Adjusted for change in contents.

03176500 NEW RIVER AT GLEN LYN, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1931, 1950, 1952, 1955-56, 1965 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1968 to current year.
WATER TEMPERATURES: October 1964 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 350 micromhos Nov. 6, 1968; minimum, 70 micromhos Mar. 26, 27, 1979.
WATER TEMPERATURES: Maximum, 30.5°C June 24, 1983; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 220 micromhos Sept. 15; minimum daily, 83 micromhos Apr. 11, 25.
WATER TEMPERATURES: Maximum daily, 30.5°C June 24; minimum, 2.0°C Jan. 18-20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
NOV										
02...	1205	2570	170	8.5	15.5	1.0	10.1	23	320	72
JAN										
25...	1130	8920	130	7.8	3.0	4.5	11.9	110	540	50
MAR										
22...	0900	24100	105	7.6	7.5	9.5	10.8	760	>6900	44
MAY										
23...	0930	11800	127	7.9	17.0	4.5	11.8	90	1000	44
JUL										
06...	0915	6080	126	7.8	22.0	2.6	7.3	83	2300	51
SEP										
06...	1115	3710	175	8.0	25.5	2.0	7.8	52	1200	76

> Actual value is known to be greater than the value shown.

DATE	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV										
02...	15	18	6.5	4.4	1.9	57	16	4.9	.10	4.6
JAN										
25...	6	12	4.8	3.7	1.4	44	10	4.9	<.10	8.8
MAR										
22...	5	11	4.0	2.8	1.8	39	9.8	4.3	.20	6.9
MAY										
23...	4	11	4.0	2.4	1.0	40	7.9	2.9	<.10	6.9
JUL										
06...	4	12	5.2	3.4	1.3	47	9.7	3.6	.10	6.9
SEP										
06...	13	16	8.7	4.6	1.4	63	20	--	.10	6.9

< Actual value is known to be less than the value shown.

03176500 NEW RIVER AT GLEN LYN, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)
NOV 02...	104	91	.94	.050	.90	.050	.040	.020	20	1
JAN 25...	65	72	.76	.050	<.10	.320	.030	.020	--	--
MAR 22...	66	65	.72	.060	.30	.030	.020	.030	40	1
MAY 23...	79	60	.57	--	--	--	--	<.010	80	4
JUL 06...	80	70	.49	.020	.40	.060	.070	.020	--	--
SEP 06...	114	--	.49	.030	.30	.040	.030	.010	40	3

< Actual value is known to be less than the value shown.

DATE	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV 02...	30	<1	2	--	<3	2	33	3	5	4
JAN 25...	--	--	--	--	--	--	--	--	--	--
MAR 22...	34	<1	<1	<1	<3	5	25	4	<4	3
MAY 23...	46	<1	<1	1	<3	3	16	2	<4	<1
JUL 06...	--	--	--	--	--	--	--	--	--	--
SEP 06...	37	<1	<1	<1	<3	3	12	1	<4	5

< Actual value is known to be less than the value shown.

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 02...	<.1	<10	1	<1	<1	83	<6.0	<4	3	85
JAN 25...	--	--	--	--	--	--	--	--	11	99
MAR 22...	.5	<10	2	<1	<1	37	<6.0	8	65	64
MAY 23...	<.1	<10	1	<1	<1	42	<6.0	3	19	67
JUL 06...	--	--	--	--	--	--	--	--	11	93
SEP 06...	.4	<10	<1	<1	<1	78	<6.0	4	7	95

< Actual value is known to be less than the value shown.

03176500 NEW RIVER AT GLEN LYN, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	163	120	125	122	117	120	105	118	159	175	180
2	163	160	120	150	116	120	118	120	120	160	180	160
3	165	170	---	140	100	130	110	130	125	150	---	162
4	174	160	130	145	100	127	100	110	121	148	178	162
5	173	150	140	122	108	135	---	105	120	140	178	200
6	178	115	135	130	112	133	105	128	121	138	178	180
7	180	137	130	140	103	121	110	120	121	---	177	200
8	173	145	130	141	108	105	115	130	---	---	170	170
9	174	140	125	141	123	110	110	145	120	---	179	180
10	173	130	135	156	125	113	108	120	120	---	176	181
11	189	140	137	150	125	115	83	---	120	160	180	200
12	180	145	150	136	107	112	98	120	121	162	165	210
13	156	155	150	135	106	120	85	133	145	170	157	210
14	---	160	143	128	102	139	110	128	139	155	---	208
15	142	155	140	130	108	120	113	122	123	140	180	220
16	140	145	145	140	110	119	110	140	150	150	185	218
17	---	133	118	147	123	---	113	120	143	158	175	178
18	165	140	110	145	124	---	110	120	145	180	180	170
19	160	135	115	140	119	---	115	119	140	181	180	205
20	180	137	120	136	118	---	100	120	140	178	175	201
21	160	145	135	143	119	105	120	120	138	155	175	200
22	165	160	137	163	119	102	---	119	120	150	200	186
23	180	127	135	142	110	105	118	110	120	150	182	182
24	197	125	135	135	105	---	110	120	121	160	180	200
25	190	135	140	124	115	113	83	120	122	165	160	200
26	160	130	140	122	120	117	98	120	122	170	160	210
27	130	155	138	122	117	116	98	120	158	158	170	179
28	140	150	138	137	122	105	115	119	156	158	180	201
29	140	140	120	135	---	110	113	120	120	155	200	201
30	135	120	122	143	---	119	118	121	145	145	170	200
31	163	---	122	152	---	121	---	121	---	142	181	---
MEAN	165	143	132	139	114	117	107	122	130	157	177	192

WTR YR 1983 MEAN 141 MAX 220 MIN 83

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	14.0	12.0	7.5	5.5	7.0	8.0	19.0	17.0	29.0	26.0	26.0
2	21.5	16.5	11.5	7.5	5.5	7.5	8.0	19.5	15.5	29.0	25.0	25.5
3	22.0	16.5	---	7.5	5.0	8.0	8.0	16.0	17.0	29.5	---	25.0
4	22.0	17.0	12.5	6.5	4.0	9.0	7.5	15.0	17.5	25.0	27.0	24.5
5	22.0	12.5	13.0	6.0	4.0	10.0	---	13.0	19.0	25.0	27.0	24.5
6	22.0	10.5	13.0	6.5	3.5	10.5	9.0	13.5	20.5	22.5	26.5	25.0
7	22.0	9.0	11.5	7.0	4.0	10.0	10.0	15.0	20.0	---	27.0	26.0
8	21.5	10.0	10.5	7.5	4.0	10.0	10.5	15.5	---	---	26.0	25.5
9	21.0	11.0	11.0	6.0	4.0	10.0	10.0	12.5	20.0	---	27.5	24.5
10	21.0	10.5	10.0	7.0	5.0	9.5	11.0	14.0	20.0	---	27.0	24.5
11	19.0	12.0	9.5	8.0	3.5	8.0	10.0	---	20.5	22.5	27.0	---
12	18.5	14.0	8.0	7.0	3.5	7.0	9.5	18.0	19.5	23.0	26.0	24.5
13	19.0	12.0	5.5	5.0	4.0	7.0	11.0	18.0	29.5	29.5	23.5	25.0
14	---	10.0	4.0	5.5	4.5	7.5	11.5	18.5	29.0	25.5	---	24.0
15	18.0	9.0	5.0	6.0	5.5	8.0	11.0	18.0	28.0	25.5	22.5	23.0
16	16.5	9.0	8.5	4.0	6.0	9.5	10.0	17.0	27.5	25.5	25.0	21.0
17	---	10.0	8.0	3.0	7.0	---	10.0	15.0	27.0	26.0	25.0	21.0
18	13.5	10.0	7.0	2.0	8.0	---	9.0	15.5	21.5	25.5	27.0	21.0
19	14.0	11.0	7.5	2.0	7.5	---	7.5	16.0	21.5	25.5	27.5	22.5
20	16.0	12.0	7.5	2.0	6.0	---	7.5	23.0	21.5	27.0	28.0	23.0
21	16.0	12.0	7.0	3.0	6.5	10.0	9.5	18.0	26.0	27.5	28.5	24.0
22	15.0	13.0	6.5	4.0	7.0	7.5	---	17.5	28.0	27.0	28.0	19.5
23	14.0	13.0	6.5	5.0	7.5	6.5	11.0	16.5	29.0	26.0	27.5	16.5
24	13.5	13.0	7.0	5.0	7.0	---	10.0	17.0	30.5	24.5	27.0	15.0
25	12.5	9.5	8.5	5.5	7.0	7.0	16.0	17.0	29.0	23.0	26.0	15.5
26	12.0	8.5	9.5	5.5	5.0	8.0	16.0	17.5	29.0	23.5	24.0	16.0
27	13.5	9.0	10.5	6.0	4.5	7.0	16.0	17.5	25.0	24.0	26.0	17.0
28	14.0	9.5	11.5	6.0	5.5	8.0	17.5	17.0	25.5	24.0	26.0	18.0
29	14.0	9.5	10.5	4.5	---	7.5	18.5	17.5	25.5	24.0	26.0	18.0
30	15.0	11.0	8.5	5.5	---	7.0	19.0	17.0	24.5	24.0	25.5	17.5
31	15.0	---	7.5	5.5	---	7.5	---	18.0	---	25.5	25.5	---
MEAN	17.5	11.5	9.0	5.5	5.5	8.5	11.0	17.0	23.5	25.5	26.0	22.0

WTR YR 1983 MEAN 15.0 MAX 30.5 MIN 2.0

03177710 BLUESTONE RIVER AT FALLS MILLS, VA

LOCATION.--Lat 37°16'17", long 81°18'18", Tazewell County, Hydrologic Unit 05050002, on right bank at upstream side of bridge on State Highway 717, 0.3 mi upstream from Brush Fork, and 0.4 mi southeast of Falls Mills.

DRAINAGE AREA.--44.2 mi^2.

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,310.41 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some diurnal fluctuation caused by discharge from sewage treatment plant 2.3 mi upstream. About sixty-five percent of water discharged from the treatment plant was diverted from another drainage basin for municipal supply. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 738 ft^3/s June 10, 1982, gage height, 6.26 ft; minimum, 1.0 ft^3/s Jan. 18, 1981, gage height, 0.92 ft, result of freezeup; minimum daily, 3.9 ft^3/s Jan. 19, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 445 ft^3/s Apr. 10, gage height, 4.25 ft, no peak above base of 450 ft^3/s; minimum, 3.5 ft^3/s Nov. 2, gage height, 0.98 ft; minimum daily, 8.6 ft^3/s Jan. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	203	51	55	85	60	85	47	28	22	16
2	14	13	164	47	159	75	90	78	41	27	20	15
3	13	18	111	45	168	67	99	82	51	36	21	15
4	14	97	87	40	112	64	85	86	148	46	44	15
5	14	57	77	37	82	60	96	74	89	57	25	13
6	14	36	66	35	70	115	91	68	76	32	23	14
7	12	29	53	33	63	125	95	64	66	27	24	12
8	13	25	48	32	52	109	89	67	58	25	20	12
9	29	23	42	34	46	98	131	61	50	23	17	12
10	45	21	39	33	47	100	320	55	44	22	15	12
11	23	19	40	34	47	99	204	53	40	21	35	12
12	19	32	48	31	44	94	157	52	34	22	49	12
13	43	37	43	28	44	91	125	50	33	22	25	17
14	35	28	39	28	48	97	106	49	29	21	22	17
15	25	26	104	29	51	91	146	46	41	21	20	13
16	22	23	359	28	80	81	121	96	45	20	17	13
17	19	21	203	27	142	72	106	73	124	20	17	12
18	18	26	135	28	141	128	102	63	128	20	17	13
19	18	25	104	32	117	272	91	62	84	20	15	11
20	18	24	95	22	98	225	79	60	101	19	14	12
21	22	23	78	8.6	92	336	71	72	65	19	14	20
22	16	71	66	15	88	247	66	71	49	37	15	18
23	14	60	92	33	112	183	103	77	41	25	14	14
24	14	75	148	41	120	148	297	85	34	51	40	14
25	32	64	120	37	133	119	262	74	32	26	16	13
26	27	53	105	36	114	97	195	66	29	23	15	12
27	19	50	88	37	99	91	153	60	27	21	23	12
28	18	94	80	41	91	83	126	55	29	20	34	13
29	17	211	71	44	---	70	106	59	43	19	42	11
30	15	119	61	51	---	62	94	66	29	18	20	23
31	14	---	55	63	---	69	---	52	---	17	17	---
TOTAL	630	1415	3024	1080.6	2515	3653	3866	2061	1707	805	712	418
MEAN	20.3	47.2	97.5	34.9	89.8	118	129	66.5	56.9	26.0	23.0	13.9
MAX	45	211	359	63	168	336	320	96	148	57	49	23
MIN	12	13	39	8.6	44	60	60	46	27	17	14	11
(*)	5.44	5.96	6.43	5.99	6.37	6.36	6.27	6.37	6.38	5.92	5.50	5.15

CAL YR 1982 TOTAL 28334.0 MEAN 77.6 MAX 660 MIN 12 * 5.93
WTR YR 1983 TOTAL 21886.6 MEAN 60.0 MAX 359 MIN 8.6 * 6.01

* Discharge from Sewage Treatment plant, equivalent in cubic feet per second; furnished by the Sanitary Board of Bluefield.

03207800 LEVISA FORK AT BIG ROCK, VA

LOCATION.--Lat 37°21'13", long 82°11'45", Buchanan County, Hydrologic Unit 05070202, on left bank at Big Rock, 2,000 ft downstream from Rocklick Creek, and 2,500 ft downstream from bridge on State Highway 645.

DRAINAGE AREA.--297 mi².

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 866.37 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Corps of Engineers satellite and gage-height telemeters at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--16 years, 387 ft³/s, 17.70 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,000 ft³/s Apr. 4, 1977, gage height, 27.38 ft, from rating curve extended above 7,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 5.0 ft³/s Oct. 1, 13, 14, 17, 18, 19, 20, 1969; minimum gage height, 3.42 ft Sept. 30, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 23.0 ft, information from local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,410 ft³/s Apr. 24, gage height, 7.24 ft, no peak above base of 4,500 ft³/s; minimum, 22 ft³/s Sept. 30, gage height, 3.42 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	49	778	282	223	429	266	396	230	84	37	54
2	42	46	954	253	418	385	278	350	205	77	36	48
3	39	68	611	234	683	340	317	458	208	278	35	43
4	39	196	427	202	576	308	295	962	820	178	41	39
5	36	200	333	182	446	286	336	820	696	563	143	38
6	35	135	291	178	435	270	391	618	493	270	99	36
7	35	116	229	175	435	270	407	499	604	157	50	33
8	35	103	189	163	396	270	401	604	482	117	40	32
9	164	89	170	154	385	266	435	569	355	101	35	30
10	291	81	158	163	429	257	1030	511	282	90	32	28
11	138	77	158	166	962	262	1020	452	230	80	60	29
12	96	91	200	154	909	257	777	476	202	70	223	39
13	287	143	149	148	716	262	618	511	178	65	72	61
14	338	122	135	140	655	291	499	401	157	61	50	43
15	192	114	173	154	655	304	1040	360	160	59	42	34
16	138	105	1380	148	640	295	1310	1010	151	57	37	30
17	107	98	1090	138	662	278	894	1130	345	56	36	29
18	94	105	633	127	662	278	696	763	202	65	34	28
19	79	100	487	90	569	391	563	569	182	60	32	27
20	75	96	493	117	470	476	458	452	166	53	31	24
21	94	98	435	182	401	563	401	476	163	48	30	45
22	87	492	380	407	365	583	365	702	130	54	31	78
23	72	590	375	676	396	505	487	865	112	70	37	43
24	67	373	391	647	370	446	2160	865	105	57	35	33
25	62	274	396	518	452	401	1720	676	99	68	47	30
26	58	252	440	412	452	345	1170	511	92	59	42	29
27	57	240	487	345	452	340	827	407	86	48	367	27
28	50	338	482	304	446	336	647	340	88	41	313	26
29	49	932	423	282	---	286	524	308	101	38	165	25
30	49	696	340	270	---	266	452	322	94	37	98	24
31	49	---	308	249	---	270	---	262	---	37	65	---
TOTAL	3000	6419	13495	7660	14660	10516	20784	17645	7418	3098	2395	1085
MEAN	96.8	214	435	247	524	339	693	569	247	99.9	77.3	36.2
MAX	338	932	1380	676	962	583	2160	1130	820	563	367	78
MIN	35	46	135	90	223	257	266	262	86	37	30	24
CFSM	.33	.72	1.47	.83	1.76	1.14	2.33	1.92	.83	.34	.26	.12
IN.	.38	.80	1.69	.96	1.84	1.32	2.60	2.21	.93	.39	.30	.14

CAL YR 1982 TOTAL 148997 MEAN 408 MAX 4900 MIN 35 CFSM 1.37 IN 18.66
WTR YR 1983 TOTAL 108175 MEAN 296 MAX 2160 MIN 24 CFSM 1.00 IN 13.55

03208000 LEVISA FORK BELOW FISHTRAP DAM, NEAR MILLARD, KY

LOCATION.--Lat 37°25'33", long 82°24'45", Pike County, Hydrologic Unit 05070202, on right bank 0.4 mi downstream from Fishtrap Dam, 1.1 mi upstream from Lower Pompey Branch, 1.9 mi northeast of Millard, 2.4 mi upstream from confluence with Russell Fork, and at mile 129.6.

DRAINAGE AREA.--392 mi^2.

PERIOD OF RECORD.--February 1938 to current year. Prior to April 1968, published as Levisa Fork at Fishtrap.

REVISED RECORDS.--WSP 953: Drainage area. WSP 1335: 1938(M), 1939, 1940(M), 1942-43, 1944-45(M), 1946, 1948.

GAGE.--Water-stage recorder. Datum of gage is 600.00 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 19, 1968, nonrecording gage at site 3.7 mi upstream at different datum. Apr. 19, 1968, to June 18, 1973, water-stage recorder at site 1.0 mi downstream at datum 59.96 ft higher.

REMARKS.--Records good. Flow regulated by Fishtrap Lake beginning October 1968. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--45 years, 478 ft^3/s, 16.56 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft^3/s Jan. 29, 1957, gage height, 33.9 ft, from floodmark, site and datum then in use, from rating curve extended above 15,000 ft^3/s on basis of slope-area measurement of peak flow; maximum gage height, 107.55 ft Apr. 5, 1977, from floodmark, backwater from Russell Fork; no flow Apr. 5, 1977, all gates on Fishtrap Dam closed; minimum observed discharge prior to Fishtrap Lake, 0.1 ft^3/s Nov. 8, 9, 1939, site then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,770 ft^3/s Apr. 24, gage height, 78.20 ft; minimum daily, 39 ft^3/s Apr. 2-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	179	1250	312	288	489	59	458	129	79	67	104
2	164	215	1620	376	314	489	39	456	142	79	67	104
3	164	213	1180	315	796	489	39	585	289	280	67	104
4	204	733	693	274	987	486	39	1360	1040	439	67	102
5	229	833	499	201	632	321	39	1220	1090	567	67	102
6	229	513	424	201	593	311	39	872	544	712	69	181
7	229	411	371	201	605	278	40	680	479	335	69	197
8	229	275	237	183	519	246	40	741	635	253	69	199
9	445	275	199	170	518	259	42	814	548	129	69	199
10	795	270	197	167	502	259	43	653	398	86	70	196
11	793	269	196	164	983	312	43	529	256	82	72	197
12	412	270	222	173	1420	334	43	395	181	72	72	191
13	616	350	259	173	1160	305	43	707	181	72	72	188
14	881	393	191	151	911	305	43	649	181	72	70	188
15	702	340	163	130	815	305	47	526	181	72	70	189
16	382	256	497	143	898	334	47	1340	181	72	69	188
17	381	253	1280	142	808	367	49	1690	225	72	67	188
18	252	251	1310	113	866	367	325	1590	292	73	67	188
19	260	324	1080	66	742	356	606	945	295	73	67	186
20	325	323	711	46	602	436	673	731	179	74	66	188
21	325	244	596	92	600	379	615	663	79	76	66	243
22	266	365	642	485	432	479	402	1110	136	76	67	298
23	143	1050	542	873	457	600	410	1280	176	76	67	285
24	140	1280	422	915	453	600	2370	1360	133	76	67	207
25	252	819	485	820	417	473	2910	762	79	76	68	152
26	315	261	683	602	591	327	1720	957	79	76	66	152
27	237	332	849	489	498	272	1270	659	79	76	66	152
28	254	389	881	350	489	272	917	414	79	74	67	152
29	309	917	704	306	---	272	613	412	80	74	63	152
30	237	1310	537	342	---	272	458	412	79	74	88	152
31	127	---	375	322	---	161	---	365	---	72	104	---
TOTAL	10461	13913	19295	9297	18896	11155	14023	25335	8445	4519	2162	5324
MEAN	337	464	622	300	675	360	467	817	282	146	69.7	177
MAX	881	1310	1620	915	1420	600	2910	1690	1090	712	104	298
MIN	127	179	163	46	288	161	39	365	79	72	63	102
(*)	-164	-160	-24	-2	+10	+24	+423	-4	+7	-10	+17.7	-149
MEAN‡	173	304	598	298	685	384	890	813	289	136	87.4	28
CFSM‡	.44	.77	1.53	.76	1.75	.98	2.27	2.08	.73	.35	.22	.07
IN‡	.51	.86	1.76	.88	1.82	1.13	2.54	2.39	.82	.40	.26	.08

CAL YR 1982 TOTAL 178923 MEAN 490 MAX 3880 MIN 43 MEAN‡ 490 CFSM‡ 1.25 IN‡ 16.96
WTR YR 1983 TOTAL 142825 MEAN 391 MAX 2910 MIN 39 MEAN‡ 388 CFSM‡ .99 IN‡ 13.45

* Change in contents, equivalent in cubic feet per second, in Fishtrap Lake.
‡ Adjusted for change in contents.

03208034 GRISSOM CREEK NEAR COUNCIL, VA

LOCATION.--Lat 37°04'43", long 82°02'25", Buchanan County, Hydrologic Unit 05070202, on right bank 150 ft upstream from culvert on State Highway 620, 250 ft upstream from mouth, and 1.7 mi east of Council.

DRAINAGE AREA.--2.82 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to September 1983 (discontinued).

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 1,810 ft, from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85 ft^3/s Feb. 3, 1982, gage height, 3.02 ft, from rating curve extended above 61 ft^3/s; minimum, 0.003 ft^3/s Sept. 10, 11, 12, 1983, gage height, 0.99 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37 ft^3/s Apr. 24, gage height, 2.74 ft, no peak above base of 45 ft^3/s; minimum, 0.003 ft^3/s Sept. 10, 11, 12, gage height, 0.99 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	.31	9.3	2.3	1.8	4.4	2.0	3.5	1.4	.24	.01	.01
2	.16	.31	8.3	2.0	4.2	3.9	2.6	2.9	1.2	.19	.01	.01
3	.14	.38	4.8	1.8	5.8	3.1	3.0	4.8	1.5	.35	.01	<.01
4	.13	2.2	3.4	1.4	5.5	2.7	2.8	7.1	5.3	.21	.02	.01
5	.13	1.9	2.7	1.3	4.8	2.4	3.8	6.0	2.6	1.6	3.0	.01
6	.12	1.3	2.3	1.3	4.9	2.3	4.6	5.2	1.9	.56	.37	<.01
7	.11	1.1	1.9	1.3	5.3	2.1	5.0	4.5	2.0	.31	.16	.01
8	.11	.89	1.7	1.1	5.2	2.0	4.8	5.8	1.5	.21	.10	.01
9	2.1	.76	1.5	1.6	5.2	1.9	5.2	6.9	1.2	.16	.06	<.01
10	1.7	.66	1.3	1.6	5.6	1.9	6.7	6.1	.99	.14	.04	<.01
11	1.0	.60	1.5	1.9	8.2	1.9	7.5	5.2	.85	.12	1.6	<.01
12	.83	.96	1.8	1.8	7.9	1.9	6.6	4.3	.73	.09	1.1	<.01
13	5.9	1.1	1.4	1.6	6.7	2.1	5.6	4.0	.64	.07	.29	.02
14	4.6	.93	1.5	1.5	6.3	2.4	5.1	3.5	.56	.07	.16	.01
15	2.3	.90	4.1	1.7	6.8	2.6	15	3.1	.52	.05	.10	<.01
16	1.4	.81	24	1.6	6.8	2.6	13	9.8	1.2	.04	.07	<.01
17	.95	.78	10	1.6	7.0	2.5	8.1	11	.90	.03	.04	.01
18	.74	.97	6.5	1.2	6.5	2.8	6.5	8.0	.65	.04	.02	.01
19	.61	.88	5.1	.80	5.5	2.8	5.2	6.1	.63	.06	.02	<.01
20	.75	.90	4.2	1.1	4.4	2.6	4.3	4.6	.74	.06	.01	.01
21	1.1	.90	3.3	2.2	3.5	6.8	3.9	4.1	.59	.03	.01	.61
22	.69	3.5	2.7	6.2	3.3	7.8	3.5	12	.46	.06	.01	.23
23	.60	4.8	3.0	8.8	3.9	6.1	9.1	12	.38	.14	.01	.06
24	.55	4.0	3.2	7.1	3.6	5.1	27	9.0	.32	.16	.01	.02
25	.51	3.3	3.3	5.7	4.5	4.1	18	6.7	.29	.15	<.01	.01
26	.46	2.6	3.9	4.7	4.7	3.2	10	5.2	.25	.08	<.01	.01
27	.42	2.3	4.1	4.1	4.8	3.3	8.0	3.6	.20	.04	.15	.01
28	.39	3.2	4.4	3.3	4.8	2.8	6.2	2.7	.45	.03	.47	.01
29	.36	9.1	4.0	2.8	---	2.2	5.1	2.4	.43	.02	.09	.01
30	.35	5.8	3.1	2.5	---	1.9	4.2	2.0	.32	.02	.03	.01
31	.33	---	2.6	2.1	---	2.3	---	1.7	---	.01	.02	---
TOTAL	29.71	58.14	134.9	80.00	147.5	96.5	212.4	173.8	30.70	5.34	8.01	1.19
MEAN	.96	1.94	4.35	2.58	5.27	3.11	7.08	5.61	1.02	.17	.26	.040
MAX	5.9	9.1	24	8.8	8.2	7.8	27	12	5.3	1.6	3.0	.61
MIN	.11	.31	1.3	.80	1.8	1.9	2.0	1.7	.20	.01	.01	.01
CFSM	.34	.69	1.54	.92	1.87	1.10	2.51	1.99	.36	.06	.09	.01
IN.	.39	.77	1.78	1.05	1.95	1.27	2.80	2.29	.40	.07	.11	.02

CAL YR 1982 TOTAL 1282.44 MEAN 3.51 MAX 46 MIN .04 CFSM 1.25 IN 16.91
WTR YR 1983 TOTAL 978.19 MEAN 2.68 MAX 27 MIN .01 CFSM .95 IN 12.90

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to August 1983 (discontinued).

PERIOD OF DAILY RECORDS.--
SPECIFIC CONDUCTANCE: October 1982 to August 1983.
WATER TEMPERATURES: December 1981 to August 1983.
DISSOLVED OXYGEN: October 1982 to May 1983.

INSTRUMENTATION.--Automatic pumping sampler since Aug. 14, 1981. Water-quality monitor since Dec. 9, 1981.

REMARKS.--Unpublished records of specific conductance and dissolved oxygen are available for some periods.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 33.0°C July 21, 1983; minimum, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum during period October 1982 to August 1983, 308 micromhos July 23; minimum, 56 micromhos Apr. 24.
WATER TEMPERATURES: Maximum during period October 1982 to August 1983, 33.0°C July 21; minimum, 0.0°C on several days during December and January.

WATER QUALITY DATA, OCTOBER 1982 TO AUGUST 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
OCT											
25...	1300	.51	129	8.3	8.0	--	52	6	12	5.3	3.7
NOV											
22...	0739	2.4	122	7.4	--	--	44	3	10	4.6	3.4
22...	0939	4.2	135	7.6	--	--	52	8	12	5.4	3.4
22...	1113	4.5	135	7.7	--	--	52	8	12	5.4	3.3
22...	1440	4.5	120	7.6	--	--	47	10	11	4.7	3.4
23...	1203	4.6	93	7.5	--	--	33	7	7.6	3.4	3.2
DEC											
15...	1100	2.1	88	7.6	2.5	--	35	11	7.6	3.8	3.1
15...	1500	3.4	95	7.5	--	--	33	8	7.6	3.3	3.3
15...	2230	11	86	7.5	--	--	32	7	7.4	3.2	3.0
16...	0420	32	76	7.5	--	--	27	2	6.1	2.8	2.3
16...	1010	31	62	7.3	--	--	21	8	4.8	2.3	2.1
16...	1330	25	59	7.3	8.0	--	--	--	--	--	--
16...	1842	18	64	7.3	--	--	21	6	4.8	2.2	2.2
JAN											
20...	1045	1.3	89	7.0	.0	--	32	11	7.4	3.4	3.7
FEB											
17...	1235	7.0	63	6.8	7.5	11.0	22	10	4.9	2.3	2.2
APR											
07...	1325	5.2	70	7.1	12.0	--	24	4	5.6	2.5	2.1
MAY											
16...	1445	12	76	7.3	12.0	9.4	30	7	7.0	3.1	2.6
AUG											
16...	1520	.08	255	7.9	24.0	8.3	87	10	21	8.3	14

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, OCTOBER 1982 TO AUGUST 1983

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT											
25...	1.8	47	4.0	3.3	<.10	5.5	77	63	.69	.39	<.010
NOV											
22...	1.9	41	7.0	4.8	--	5.7	118	62	--	--	--
22...	2.5	44	9.0	6.5	--	6.5	84	72	--	--	--
22...	2.7	44	9.0	6.2	--	6.6	83	72	--	--	--
22...	2.5	37	10	5.0	--	7.4	74	66	--	--	--
23...	1.7	26	9.0	3.6	--	8.0	56	53	--	--	--
DEC											
15...	1.5	25	10	3.2	<.10	7.8	59	52	2.0	.78	<.010
15...	3.1	25	10	5.2	--	6.9	60	55	--	--	--
15...	2.6	25	12	4.4	--	6.9	54	55	--	--	--
16...	2.2	25	11	3.1	--	6.4	52	49	--	--	--
16...	1.9	13	10	2.3	--	7.2	46	39	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	1.4	15	10	2.2	--	7.2	45	39	--	--	--
JAN											
20...	1.5	22	11	3.8	<.10	8.3	59	52	.92	.72	.020
FEB											
17...	1.2	12	12	2.4	<.10	8.1	39	40	1.1	.68	.020
APR											
07...	1.3	20	12	2.6	<.10	7.3	50	45	.57	.37	<.010
MAY											
16...	1.5	23	12	2.1	<.10	7.8	51	50	.82	.52	<.010
AUG											
16...	3.3	77	13	24	<.10	5.1	143	135	--	<.10	<.010

< Actual value is known to be less than the value shown.

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE)
OCT											
25...	--	<.10	--	.30	<.010	<.010	--	1	1	<1	<10
NOV											
22...	--	--	--	--	--	--	<100	--	--	--	--
22...	--	--	--	--	--	--	<100	--	--	--	--
22...	--	--	--	--	--	--	<100	--	--	--	--
22...	--	--	--	--	--	--	<100	--	--	--	--
23...	--	--	--	--	--	--	500	--	--	--	--
DEC											
15...	--	.50	.00	1.2	.040	.010	--	--	--	--	--
15...	--	--	--	--	--	--	100	--	--	--	--
15...	--	--	--	--	--	--	100	--	--	--	--
16...	--	--	--	--	--	--	100	--	--	--	--
16...	--	--	--	--	--	--	200	--	--	--	--
16...	--	--	--	--	--	--	--	1	<1	--	<10
16...	--	--	--	--	--	--	100	--	--	--	--
JAN											
20...	.18	.20	.00	.20	.040	.050	--	--	--	--	--
FEB											
17...	.38	.60	.20	.40	.020	<.010	--	--	--	--	--
APR											
07...	--	.30	.10	.20	.080	<.010	--	--	--	--	--
MAY											
16...	--	.60	.30	.30	.080	.010	--	--	--	--	--
AUG											
16...	--	.30	.10	.20	.020	.030	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, OCTOBER 1982 TO AUGUST 1983

DATE	BERYLLIUM, DIS-SOLVED (UG/L AS BE)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CADMIUM RECOV. FM BOTTOM MATERIAL (UG/G AS CD)	CHROMIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT											
25...	<1	<1	20	<1	<1	<1	10	10	2	2	3
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	60	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	<1	--	--	3	<1	--	10	10	--	4	1
16...	--	--	--	--	--	--	--	--	--	--	--
JAN											
20...	--	--	10	--	--	--	--	--	--	--	--
FEB											
17...	--	--	10	--	--	--	--	--	--	--	--
APR											
07...	--	--	10	--	--	--	--	--	--	--	--
MAY											
16...	--	--	20	--	--	--	--	--	--	--	--
AUG											
16...	--	--	60	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS.FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT										
25...	5	180	120	1	2	10	10	7	.3	.3
NOV										
22...	--	1300	82	--	--	--	80	2	--	--
22...	--	3100	94	--	--	--	170	3	--	--
22...	--	2600	85	--	--	--	130	2	--	--
22...	--	1100	110	--	--	--	70	2	--	--
23...	--	440	65	--	--	--	30	4	--	--
DEC										
15...	--	230	61	--	--	--	20	11	--	--
15...	--	1000	58	--	--	--	50	6	--	--
15...	--	5200	49	--	--	--	220	2	--	--
16...	--	13000	73	--	--	--	480	3	--	--
16...	--	3200	32	--	--	--	160	10	--	--
16...	--	--	--	5	1	--	--	--	<.1	<.1
16...	--	2100	36	--	--	--	90	7	--	--
JAN										
20...	--	270	24	--	--	--	10	12	--	--
FEB										
17...	--	460	37	--	--	--	20	8	--	--
APR										
07...	--	3100	11	--	--	--	140	9	--	--
MAY										
16...	--	2600	49	--	--	--	130	20	--	--
AUG										
16...	--	480	40	--	--	--	50	34	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, OCTOBER 1982 TO AUGUST 1983

DATE	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)
OCT										
25...	<.01	3	4	<10	<1	<1	<1	70	<4	16
NOV										
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
DEC										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	5	2	--	<1	<1	--	20	<4	--
16...	--	--	--	--	--	--	--	--	--	--
JAN										
20...	--	--	--	--	--	--	--	--	--	--
FEB										
17...	--	--	--	--	--	--	--	--	--	--
APR										
07...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	--	--	--	--	--	--	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, DECEMBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)
DEC			
22...	0130	1.5	5
26...	0230	1.5	6
JAN			
03...	0230	5.2	1410
04...	1820	22	148
07...	1425	5.2	14
19...	1405	8.8	54
20...	0045	18	58
22...	1325	11	17
FEB			
03...	0110	19	279
03...	0435	67	383
03...	1240	55	201
03...	1245	56	162
03...	1615	36	68
03...	1655	19	92
04...	0310	18	19
16...	1655	19	216
MAY			
19...	1445	9.0	3310
19...	1455	18	5880
19...	1500	32	4620
19...	1505	62	6280
19...	1530	62	13100
19...	1550	32	12200
19...	1710	20	3250
19...	1730	32	2590
19...	2050	42	493
20...	0230	23	165
28...	1715	2.9	798
28...	1720	5.7	1610
28...	1945	5.7	2600
29...	1820	2.9	45
31...	1955	1.6	379
31...	2005	5.7	1530
JUN			
01...	0545	20	190
01...	1310	16	129
01...	1315	16	101
01...	1325	16	96
02...	1100	11	61
02...	1605	9.3	71
03...	1505	5.7	50
04...	1455	5.7	125
04...	1505	8.0	460
04...	1510	11	1390
04...	2005	18	325
05...	1015	20	82
05...	1340	18	91
06...	0350	11	48
07...	0920	5.7	33
07...	1535	4.8	35
08...	1500	3.9	27
08...	1800	8.0	222
08...	1850	5.9	222
08...	2345	5.9	107
09...	1005	4.2	21
10...	1105	12	52
10...	1110	12	54
26...	2045	5.2	474
26...	2055	9.9	1610
26...	2358	5.5	945
JUL			
28...	1815	1.4	621
28...	1830	.59	176
28...	1955	.59	92
28...	2000	.70	86
28...	2055	.80	60
28...	2400	.80	101
29...	0100	.64	73
29...	1805	.59	98
29...	1850	1.7	248
29...	1925	.97	164
29...	2015	1.5	151
29...	2220	1.2	160
30...	0445	.80	67
30...	1230	.64	19
30...	2305	.62	62
31...	0100	.64	39
31...	0655	.59	36
31...	0955	1.3	53
31...	1100	2.3	166
31...	1150	2.4	158
AUG			
08...	2330	.64	52
09...	1340	.53	40
16...	2230	2.8	1900
16...	2330	2.0	1080
17...	0330	.97	167
17...	0530	.70	119
17...	0730	.62	78
17...	0930	.51	46
17...	1130	.44	34
17...	1230	.39	30
25...	0036	.41	47
25...	0203	4.8	3300
25...	0403	3.8	1530
25...	0603	1.8	483
25...	0803	1.8	640
25...	0824	3.5	443
25...	0915	5.0	3560
25...	1115	5.5	959
25...	1315	5.2	616
25...	1515	4.0	160
25...	1715	2.8	137
25...	1915	2.1	100
25...	2315	1.4	81
26...	0315	1.1	58
26...	0715	.93	44
26...	1115	.83	28
26...	1515	.67	29
26...	1915	.56	34
31...	1345	2.0	93
31...	1600	1.7	63
31...	2000	1.4	50
31...	2400	1.1	42
SEP			
01...	0400	1.0	33
01...	0600	1.3	83
01...	0800	2.3	258
01...	0845	4.8	367
01...	0901	5.2	538
01...	0902	5.2	508
01...	1008	4.8	525
01...	1045	4.3	509
01...	1245	3.6	150
01...	1645	2.8	66
01...	2045	2.7	72
01...	2245	2.7	73
02...	0045	2.3	69
02...	0445	2.0	47
02...	0845	1.8	28
14...	0935	11	2040

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)
OCT			
09...	1510	.59	85
09...	1520	1.2	158
09...	1530	2.3	214
09...	1540	4.5	525
09...	1635	8.8	209
09...	1850	7.2	103
09...	2050	4.6	1130
09...	2250	4.2	713
10...	0050	3.1	69
10...	0850	1.8	19
10...	1450	1.4	21
10...	1850	1.2	12
10...	2050	1.3	35
10...	2250	1.2	27
11...	0050	1.1	19
11...	0250	1.2	18
11...	0450	1.2	16
11...	0650	1.1	16
20...	2140	1.3	62
20...	2340	2.2	49
21...	0140	1.9	32
21...	0340	1.4	42
NOV			
04...	0257	1.3	20
04...	0457	1.8	33
04...	0657	2.0	27
04...	0857	2.2	21
04...	1057	2.4	20
04...	1257	3.0	22
04...	1457	3.0	21
04...	1657	2.8	15
04...	2057	2.4	10
05...	0257	2.2	5
05...	0857	2.1	5
05...	1657	1.8	7
22...	1118	4.5	112
22...	1139	4.6	90
22...	1339	4.6	58
22...	1440	4.5	41
23...	1203	4.8	16
DEC			
15...	1140	2.1	6
15...	1730	5.2	66
15...	2000	7.7	146
16...	0100	17	313
16...	0330	29	569
16...	0510	33	472
16...	0650	34	345
16...	0830	32	273
16...	1150	28	115
16...	1330	25	98
16...	1510	23	80
16...	1740	20	126
JAN			
09...	1720	2.4	49
18...	1230	1.1	15
21...	1630	2.3	29
21...	1900	3.2	56
21...	2130	3.8	53
21...	2400	4.2	51
22...	0230	5.0	102
22...	0500	5.2	88
22...	1000	5.5	56
22...	1500	6.8	125
22...	1730	7.2	98
22...	2000	7.7	86
23...	0200	8.8	80
23...	0430	9.0	69
23...	0700	9.0	55
23...	1200	9.0	77
23...	1700	8.8	44
23...	2200	8.5	49

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)
FEB			
02...	1125	5.3	235
02...	1630	5.0	88
02...	1900	5.0	51
02...	2130	5.2	49
02...	2400	5.5	48
03...	0500	5.5	25
03...	1000	5.7	24
03...	2000	5.9	27
04...	0600	5.7	16
04...	2130	5.2	14
MAR			
21...	1020	6.6	79
21...	1250	7.0	102
21...	1520	7.5	110
21...	1750	8.2	106
21...	2020	8.2	95
21...	2250	8.5	70
22...	0120	8.5	33
22...	0350	8.5	19
22...	0620	8.2	17
22...	0850	8.2	18
22...	1120	8.0	23
22...	1350	7.7	16
22...	1850	7.2	25
22...	2350	7.0	16
23...	0220	6.8	18
23...	0400	6.6	13
APR			
05...	0848	7.0	36
10...	1100	6.6	52
10...	1420	6.8	66
10...	1920	7.2	85
10...	2150	7.7	102
11...	0250	7.7	58
11...	1250	7.5	35
11...	2250	7.2	33
12...	0850	6.8	22
15...	0310	7.7	246
15...	0540	11	535
15...	1540	20	308
15...	1810	20	223
15...	2040	19	155
15...	2310	18	103
16...	0140	18	80
16...	0410	16	66
16...	0910	14	52
16...	1410	12	59
16...	1910	11	56
17...	0010	9.9	42
17...	0740	8.8	26
17...	1510	7.7	35
18...	0110	6.8	23
MAY			
03...	1550	7.2	285
03...	1635	7.5	228
03...	1745	7.5	79
03...	2010	7.2	90
04...	0845	7.0	36
16...	1430	12	105
16...	1555	12	114
16...	1750	13	94
16...	2030	13	93
16...	2300	13	100
17...	0130	13	85
17...	0630	12	52
17...	0830	12	45
22...	0015	11	653
22...	0245	13	420
22...	0510	11	130
22...	2000	13	134

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)
JUN			
04...	0310	10	1030
AUG			
05...	0730	.44	151
05...	0810	1.8	632
05...	0850	18	2840
05...	1120	11	1020
05...	1158	6.6	689
05...	1350	3.6	353
05...	1357	3.3	287
05...	1620	1.8	150
05...	1850	1.2	91
05...	2120	.90	67
06...	0450	.48	42
06...	0950	.39	41
06...	1720	.28	56
07...	0050	.19	18
11...	1850	.25	150
11...	2010	2.3	276
SEP			
21...	1210	.59	1460
21...	1340	1.3	2360
21...	1610	2.0	79
21...	1830	1.3	226
21...	2105	.90	222
21...	2330	.56	87
22...	0200	.41	74
22...	0430	.33	52
22...	0930	.22	26
22...	1300	.20	16

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), OCTOBER 1982 TO AUGUST 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	186	169	179	225	143	155	108	73	87	88	79	82
2	213	175	185	153	145	150	79	73	76	144	81	86
3	191	174	183	230	147	157	99	79	83	88	82	85
4	219	184	193	160	122	145	91	86	88	135	78	84
5	204	183	190	140	107	113	102	89	93	80	76	79
6	219	194	207	110	105	108	98	91	94	138	76	81
7	214	193	206	173	108	113	105	94	97	82	78	79
8	215	204	209	116	109	113	101	95	98	124	80	84
9	215	124	187	172	113	119	120	94	99	98	80	88
10	164	147	154	125	116	120	100	92	96	161	84	90
11	166	149	156	207	119	129	120	94	99	91	81	85
12	162	149	155	151	115	128	103	90	96	107	75	81
13	159	110	132	198	119	128	121	97	103	80	75	77
14	114	108	110	120	110	115	105	94	100	124	71	77
15	122	113	116	141	107	112	113	81	95	82	71	73
16	128	120	123	111	104	108	81	60	65	124	73	78
17	129	124	126	185	104	113	67	62	65	77	72	74
18	139	126	130	118	108	112	72	67	69	122	74	80
19	140	128	134	163	113	123	79	71	74	86	78	82
20	188	124	138	134	124	128	81	77	79	109	73	81
21	156	132	138	163	120	129	87	81	83	85	69	73
22	186	131	137	139	105	123	84	81	83	86	66	75
23	137	128	133	124	95	100	109	83	86	66	60	62
24	193	127	136	109	101	104	84	80	82	75	62	63
25	136	127	132	114	94	98	88	79	82	65	63	64
26	183	129	138	100	95	98	90	81	86	74	64	66
27	139	130	135	111	100	103	89	79	82	78	66	67
28	224	135	144	112	103	106	80	77	78	77	68	70
29	143	132	139	116	81	90	82	76	78	76	70	72
30	215	135	146	88	82	85	79	76	77	94	72	75
31	150	140	144	---	---	---	93	77	79	78	75	76
MONTH	224	108	153	230	81	118	121	60	86	161	60	77

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	135	75	81	83	68	70	80	75	77	86	75	78
2	97	74	85	77	68	70	134	70	85	95	77	82
3	84	68	74	75	70	72	86	74	77	100	76	87
4	70	66	68	79	72	75	85	71	74	97	69	82
5	74	68	70	92	74	77	88	70	78	99	66	86
6	75	65	69	81	75	78	83	69	72	---	---	---
7	82	73	74	102	76	81	73	68	71	---	---	---
8	73	70	72	83	77	80	74	69	71	---	---	---
9	75	69	72	121	79	83	88	70	77	---	---	---
10	82	70	74	110	78	82	84	68	74	---	---	---
11	89	67	70	155	80	88	71	66	68	---	---	---
12	68	66	66	91	82	86	82	66	70	---	---	---
13	83	66	69	116	78	84	76	69	71	---	---	---
14	73	68	70	81	74	77	78	69	71	---	---	---
15	88	69	72	98	73	76	90	62	75	---	---	---
16	72	68	69	102	71	74	73	62	69	---	---	---
17	85	64	68	101	71	75	76	69	71	---	---	---
18	66	63	65	84	70	75	83	68	73	---	---	---
19	82	64	67	86	74	78	84	72	76	72	66	69
20	93	67	70	87	73	76	96	76	81	92	69	75
21	86	70	73	106	62	75	92	79	82	101	76	79
22	78	71	73	67	59	61	98	83	86	111	86	93
23	90	75	79	78	61	64	103	63	87	101	91	94
24	86	74	77	66	63	64	72	56	60	101	91	95
25	98	72	78	83	65	68	68	59	62	105	95	99
26	85	69	73	73	68	70	71	59	64	105	99	103
27	82	69	71	80	67	72	75	64	67	122	101	108
28	72	67	69	76	72	73	77	67	71	134	105	115
29	---	---	---	112	74	78	81	70	74	137	121	132
30	---	---	---	80	74	76	83	72	76	135	117	124
31	---	---	---	100	77	80	---	---	---	119	109	113
MONTH	135	63	72	155	59	75	134	56	74	137	66	95

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), OCTOBER 1982 TO AUGUST 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST	
1	---	---	---	229	154	164	258	229	243
2	---	---	---	175	156	165	230	207	221
3	---	---	---	233	154	170	258	214	227
4	---	---	---	169	134	160	255	189	228
5	---	---	---	254	139	182	216	149	198
6	---	---	---	164	152	158	---	---	---
7	---	---	---	246	157	169	---	---	---
8	---	---	---	177	158	165	---	---	---
9	---	---	---	238	166	180	---	---	---
10	116	98	105	184	164	175	---	---	---
11	123	103	110	220	176	186	---	---	---
12	136	105	114	188	167	178	---	---	---
13	145	110	121	203	177	191	---	---	---
14	140	109	122	199	179	190	---	---	---
15	156	113	128	237	191	206	---	---	---
16	166	98	129	213	194	202	---	---	---
17	---	---	---	221	193	205	---	---	---
18	---	---	---	220	198	210	---	---	---
19	---	---	---	220	195	208	---	---	---
20	---	---	---	214	197	206	---	---	---
21	---	---	---	224	202	212	---	---	---
22	---	---	---	252	174	221	---	---	---
23	---	---	---	308	196	248	---	---	---
24	148	136	143	238	162	211	---	---	---
25	163	138	148	287	220	238	---	---	---
26	164	144	151	231	211	223	---	---	---
27	166	147	156	248	209	231	---	---	---
28	192	144	156	247	226	234	---	---	---
29	193	137	158	248	225	236	---	---	---
30	162	147	154	244	228	237	---	---	---
31	---	---	---	258	229	239	---	---	---
MONTH	193	98	135	308	134	200	258	149	223
YEAR	308	56	110						

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO AUGUST 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.0	12.5	15.0	14.5	8.5	11.5	12.0	10.0	11.0	6.5	3.5	5.0
2	22.0	13.0	16.0	15.5	9.5	12.5	13.5	11.0	12.0	6.5	5.0	5.5
3	21.0	13.5	16.5	16.5	11.0	13.5	14.0	11.0	12.5	4.5	1.5	4.0
4	21.5	15.5	18.0	13.5	7.5	10.5	14.0	11.0	12.0	---	.0	---
5	22.0	16.5	18.5	8.0	5.5	7.0	14.5	11.5	13.0	2.5	.0	1.0
6	22.0	15.0	18.0	6.5	3.0	5.0	11.5	9.0	10.0	4.0	1.0	2.5
7	20.0	15.5	18.0	7.5	2.5	5.0	9.0	6.0	7.5	5.5	2.0	3.5
8	20.5	17.0	18.0	8.5	3.5	6.0	7.0	4.0	5.5	4.5	1.0	3.0
9	18.0	16.0	17.0	10.0	4.5	7.0	6.0	2.5	4.5	5.0	3.0	4.0
10	21.0	16.5	18.5	11.0	5.5	8.0	6.0	1.5	4.0	8.5	4.0	6.5
11	17.5	15.0	16.5	12.0	7.0	9.5	6.5	1.5	5.5	6.5	4.0	5.5
12	16.0	14.0	15.0	13.5	10.0	11.5	2.5	.0	1.0	3.5	1.0	2.5
13	14.5	14.0	14.5	10.5	4.0	7.0	.0	.0	.0	3.0	.5	1.5
14	15.0	12.5	13.5	6.5	2.5	4.5	1.0	.0	.5	4.5	.0	2.5
15	15.0	11.0	13.0	6.0	3.0	5.0	7.0	1.0	3.5	4.0	.5	2.0
16	14.0	9.5	11.5	6.0	1.5	3.5	8.0	7.0	7.5	2.0	.0	.5
17	12.0	7.0	9.0	7.5	3.5	5.5	7.0	4.5	6.5	1.5	.0	.5
18	12.5	6.5	9.5	10.0	7.5	8.5	6.0	3.0	4.5	.0	.0	.0
19	13.5	7.5	10.0	12.0	7.5	9.5	6.0	4.5	5.0	.0	.0	.0
20	13.5	9.0	11.5	12.0	9.5	11.0	5.5	4.0	5.0	.0	.0	.0
21	12.0	9.5	11.0	13.5	11.0	12.5	4.5	2.0	3.5	.0	.0	.0
22	11.5	7.5	9.0	13.5	11.5	12.0	4.0	.5	2.5	5.5	.0	2.5
23	10.0	5.5	7.5	13.0	10.5	12.0	7.0	4.0	5.5	6.0	4.0	5.0
24	8.5	5.0	7.0	12.5	6.0	9.5	9.0	4.5	7.0	5.0	4.5	4.5
25	8.5	6.5	7.5	8.0	4.5	6.5	12.0	8.5	10.0	4.5	3.5	4.0
26	9.5	4.0	6.5	9.5	5.0	7.5	11.0	10.0	10.5	5.5	3.0	4.0
27	10.5	4.0	7.0	9.0	8.0	8.5	11.5	8.5	10.0	6.0	3.0	4.0
28	10.5	4.5	7.5	11.0	8.5	9.5	13.0	10.0	11.5	6.0	3.0	4.5
29	11.0	5.5	8.0	11.5	9.0	10.5	10.0	6.0	8.0	6.5	1.5	4.0
30	12.0	7.0	9.5	11.5	8.0	9.5	6.0	4.0	5.0	7.5	4.5	6.0
31	13.0	8.0	10.5	---	---	---	6.5	3.5	5.0	7.0	3.5	5.0
MONTH	22.0	4.0	12.5	16.5	1.5	8.5	14.5	.0	7.0	8.5	.0	3.0

		FEBRUARY			MARCH			APRIL			MAY	
1	7.0	2.0	5.0	9.0	4.5	6.5	12.5	4.5	8.5	19.5	12.0	15.5
2	9.5	7.0	8.0	9.0	2.5	5.5	10.5	7.5	8.5	16.5	13.5	14.5
3	7.0	3.5	5.0	11.0	3.5	7.0	7.0	6.0	6.5	13.5	11.5	13.0
4	3.5	2.0	2.5	12.5	5.0	8.5	13.5	5.0	9.0	14.5	9.5	11.5
5	4.5	1.0	2.5	14.0	6.5	10.0	9.5	7.5	8.5	15.5	9.0	11.5
6	4.5	1.0	3.5	15.0	10.5	12.0	12.5	8.0	10.0	---	---	---
7	4.0	2.5	3.5	14.5	8.0	11.0	12.5	9.5	10.5	---	---	---
8	4.5	2.0	3.0	13.5	9.0	11.0	13.0	9.5	11.0	---	---	---
9	5.5	1.5	3.5	10.0	7.0	8.5	13.0	10.5	11.5	---	---	---
10	5.5	3.0	4.5	6.5	4.0	5.0	13.0	8.0	10.0	---	---	---
11	4.5	2.5	3.5	3.5	2.5	3.0	8.0	7.0	7.5	---	---	---
12	4.0	3.5	4.0	7.5	2.5	4.0	14.0	6.5	10.0	---	---	---
13	5.5	3.0	4.0	10.0	1.5	5.0	14.0	8.0	10.5	---	---	---
14	6.5	3.0	4.5	10.5	3.0	6.5	13.0	10.0	11.0	---	---	---
15	7.0	2.0	4.5	13.0	4.5	8.5	11.0	8.0	9.5	---	---	---
16	8.5	2.5	5.0	12.5	6.0	9.0	12.0	6.5	8.5	---	---	---
17	8.0	4.0	5.5	9.0	6.5	8.0	11.0	6.0	8.0	---	---	---
18	8.0	4.5	5.5	9.5	7.5	8.5	7.0	4.5	5.5	---	---	---
19	8.0	3.0	5.5	9.0	6.5	8.0	7.5	3.0	5.0	14.5	12.0	13.0
20	9.0	3.0	6.0	11.5	5.0	8.5	11.5	3.5	6.5	17.0	11.5	14.5
21	9.0	3.5	6.5	9.0	5.0	7.0	12.0	3.0	7.0	17.5	13.5	15.0
22	9.5	4.0	7.0	6.0	4.0	5.0	9.5	4.5	7.5	15.0	13.0	14.0
23	8.0	6.5	7.0	9.0	3.0	5.5	9.0	7.5	8.0	16.0	12.5	13.5
24	6.0	4.5	5.5	6.5	3.0	4.0	8.5	7.5	8.0	17.0	11.5	13.5
25	5.0	2.5	3.5	9.5	2.0	5.0	11.5	6.5	8.5	17.0	10.0	13.5
26	5.5	1.5	3.0	9.5	2.0	5.5	14.5	6.5	10.0	17.0	11.5	13.5
27	6.5	.5	3.5	11.0	5.0	7.5	16.5	7.5	11.0	17.0	9.0	13.0
28	8.0	2.5	5.5	7.5	5.0	6.5	16.5	8.0	12.0	16.5	10.0	13.0
29	---	---	---	5.0	4.0	4.5	16.0	10.5	13.0	18.0	12.5	15.0
30	---	---	---	9.0	2.5	6.0	16.5	11.5	13.5	20.0	13.5	16.5
31	---	---	---	7.5	6.0	6.5	---	---	---	16.0	13.0	14.5
MONTH	9.5	.5	4.5	15.0	1.5	7.0	16.5	3.0	9.0	20.0	9.0	14.0

BIG SANDY RIVER BASIN

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO AUGUST 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST	
1	---	---	---	28.5	18.5	22.5	25.5	21.0	23.0
2	---	---	---	30.5	18.5	23.5	26.5	20.0	23.0
3	---	---	---	28.5	19.5	23.5	32.0	19.5	25.0
4	---	---	---	29.5	20.0	23.0	29.0	21.5	24.5
5	---	---	---	22.5	18.5	20.0	23.5	18.5	21.0
6	---	---	---	23.0	16.5	19.5	---	---	---
7	---	---	---	25.5	13.0	18.5	---	---	---
8	---	---	---	27.5	14.0	19.5	---	---	---
9	---	---	---	27.5	14.5	20.0	---	---	---
10	22.0	13.0	17.0	25.0	16.0	20.0	---	---	---
11	22.5	14.0	17.5	29.0	16.0	21.5	---	---	---
12	23.0	14.5	18.5	28.0	15.5	21.0	---	---	---
13	24.0	14.5	18.5	29.0	18.0	22.5	---	---	---
14	24.0	14.5	19.0	29.5	19.5	24.0	---	---	---
15	24.0	16.0	19.5	30.0	19.5	24.5	---	---	---
16	24.5	16.0	19.0	29.0	20.0	24.0	---	---	---
17	---	---	---	30.5	20.5	24.5	---	---	---
18	---	---	---	27.5	20.5	23.0	---	---	---
19	---	---	---	27.5	19.0	22.5	---	---	---
20	---	---	---	31.5	19.5	24.5	---	---	---
21	---	---	---	33.0	21.5	26.5	---	---	---
22	---	---	---	31.5	22.5	25.5	---	---	---
23	---	---	---	31.5	21.0	25.0	---	---	---
24	26.5	17.0	21.5	27.0	21.5	23.5	---	---	---
25	27.0	18.5	22.0	22.5	19.5	21.0	---	---	---
26	27.5	18.5	22.5	28.0	18.0	21.5	---	---	---
27	30.0	21.0	23.5	26.0	16.5	21.0	---	---	---
28	24.5	19.5	21.5	28.5	17.0	22.0	---	---	---
29	25.0	19.5	21.5	28.0	17.5	22.5	---	---	---
30	26.5	18.5	22.0	29.5	18.5	23.5	---	---	---
31	---	---	---	26.5	19.5	23.0			
MONTH	30.0	13.0	20.5	33.0	13.0	22.5	32.0	18.5	23.5
YEAR	33.0	.0	10.5						

03208034 GRISSOM CREEK NEAR COUNCIL, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, OCTOBER 1982 TO MAY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.1	6.1	7.4	10.7	8.1	9.2	9.1	8.8	9.0	12.4	11.5	11.9
2	9.2	5.9	7.2	10.3	7.9	8.9	9.3	8.8	9.1	12.0	11.4	11.7
3	8.8	5.8	7.0	9.8	7.6	8.5	9.5	8.8	9.2	12.7	11.9	12.2
4	8.9	5.3	6.8	9.7	8.1	9.0	9.8	9.0	9.4	13.9	12.8	13.4
5	8.8	5.3	6.6	10.6	9.8	10.1	9.6	9.1	9.4	14.4	13.1	13.7
6	8.9	5.5	6.9	11.4	10.3	10.7	10.7	9.8	10.3	13.5	12.6	13.0
7	9.2	5.8	7.1	11.5	10.0	10.6	11.6	10.8	11.1	13.1	12.2	12.7
8	9.0	6.1	7.1	11.3	9.7	10.4	12.5	11.6	11.9	13.5	12.4	12.9
9	8.8	7.0	7.6	11.1	9.3	10.1	12.6	12.0	12.1	12.7	12.2	12.5
10	8.0	7.2	7.6	10.9	9.2	9.9	13.2	11.5	12.3	12.4	11.2	11.9
11	8.4	7.6	7.9	10.4	8.7	9.5	12.7	11.5	11.7	12.3	11.5	11.9
12	9.1	8.0	8.4	9.4	8.2	8.7	13.4	12.7	13.0	13.4	12.3	12.9
13	8.5	8.1	8.4	10.6	8.9	10.0	13.6	13.3	13.4	13.6	12.8	13.2
14	8.8	8.4	8.6	11.5	10.0	10.7	13.6	13.1	13.3	13.7	12.0	12.8
15	9.2	8.2	8.7	11.0	10.1	10.5	13.0	11.3	12.3	13.4	12.2	12.9
16	9.7	8.6	9.2	11.8	10.2	10.9	11.5	11.1	11.3	13.7	13.0	13.4
17	10.6	9.5	9.9	11.0	9.5	10.3	12.0	11.5	11.7	13.5	13.1	13.4
18	10.8	9.1	9.9	10.0	9.0	9.5	12.5	11.7	12.1	13.8	13.3	13.6
19	10.7	9.1	9.7	10.0	8.6	9.2	12.0	11.5	11.8	13.8	13.4	13.6
20	10.5	8.8	9.5	9.7	8.5	9.0	12.1	11.7	11.9	13.7	13.4	13.5
21	10.3	9.1	9.6	9.5	8.3	8.8	12.7	12.1	12.3	13.6	13.4	13.4
22	10.9	9.6	10.1	8.9	8.5	8.7	13.3	12.0	12.6	13.3	11.7	12.4
23	11.6	9.9	10.6	9.2	8.5	8.8	12.1	11.4	11.8	12.1	11.5	11.8
24	11.7	10.0	10.8	10.2	8.6	9.4	12.1	10.8	11.5	12.0	11.8	11.9
25	11.3	10.1	10.6	11.0	9.7	10.3	11.3	10.3	10.8	12.1	11.9	12.0
26	11.8	10.0	10.7	10.7	9.3	9.9	10.8	10.6	10.7	12.4	11.6	12.0
27	11.8	9.7	10.6	10.0	9.4	9.6	11.2	10.4	10.8	12.3	11.5	11.9
28	11.6	9.5	10.4	9.7	8.9	9.3	10.7	10.1	10.4	12.1	11.3	11.8
29	11.5	9.3	10.3	9.4	8.8	9.1	11.7	10.7	11.1	12.6	11.1	11.8
30	11.1	8.8	9.9	9.8	8.9	9.3	12.4	11.7	12.0	11.6	10.9	11.2
31	10.9	8.5	9.6	---	---	---	12.5	11.5	12.0	12.0	11.0	11.5
MONTH	11.8	5.3	8.9	11.8	7.6	9.6	13.6	8.8	11.4	14.4	10.9	12.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.3	10.7	11.4	11.8	10.7	11.4	11.7	9.9	10.7	10.1	8.7	9.3
2	10.7	10.1	10.4	12.4	10.8	11.5	10.8	10.0	10.4	9.8	8.9	9.3
3	11.7	10.7	11.2	12.2	10.5	11.3	11.1	10.7	11.0	9.8	9.3	9.5
4	12.2	11.7	12.0	11.8	10.1	10.9	11.7	9.9	10.7	10.5	9.6	10.0
5	12.6	11.4	12.0	11.3	9.9	10.5	11.0	10.4	10.7	10.6	9.4	10.0
6	12.3	11.2	11.6	10.5	9.6	10.1	10.8	9.8	10.4	---	---	---
7	11.9	11.3	11.5	11.1	9.6	10.3	10.5	9.8	10.2	---	---	---
8	12.1	11.2	11.7	10.7	9.7	10.2	10.5	9.5	10.1	---	---	---
9	12.1	10.9	11.5	11.0	10.2	10.7	10.4	9.6	9.9	---	---	---
10	11.5	10.9	11.2	11.9	11.1	11.5	10.7	9.8	10.3	---	---	---
11	11.8	11.3	11.5	12.5	11.9	12.2	11.0	10.7	10.8	---	---	---
12	11.7	11.5	11.6	12.5	11.3	11.9	11.3	9.5	10.4	---	---	---
13	12.1	11.2	11.7	12.8	10.8	11.7	10.9	9.5	10.2	---	---	---
14	11.9	11.0	11.5	12.2	10.3	11.2	10.3	9.5	9.9	---	---	---
15	12.3	11.0	11.7	11.8	10.0	10.8	10.8	9.7	10.3	---	---	---
16	12.2	10.7	11.5	11.6	10.2	10.8	11.2	9.9	10.7	---	---	---
17	12.0	10.8	11.4	11.4	10.5	10.9	11.3	10.1	10.8	---	---	---
18	11.8	10.9	11.4	11.1	10.4	10.7	11.8	10.9	11.2	---	---	---
19	12.2	10.9	11.5	11.1	10.5	10.8	12.0	11.0	11.5	10.0	9.1	9.6
20	12.3	10.8	11.5	11.8	10.1	10.8	12.0	10.1	11.1	10.0	8.6	9.3
21	12.2	10.6	11.4	11.6	10.4	11.0	12.2	9.9	11.0	9.7	8.6	9.1
22	11.9	10.5	11.1	12.0	11.5	11.8	11.7	10.3	10.9	9.5	8.9	9.2
23	11.2	10.7	10.9	12.3	10.9	11.7	10.8	10.3	10.5	9.6	8.9	9.3
24	11.7	11.1	11.4	12.3	11.3	11.9	10.9	10.5	10.6	9.9	8.9	9.4
25	12.5	11.6	12.0	12.6	10.8	11.7	11.3	10.0	10.7	10.4	8.7	9.5
26	12.9	11.9	12.4	12.6	10.7	11.6	11.4	9.5	10.5	10.0	8.8	9.4
27	13.2	11.4	12.3	11.4	10.2	10.9	11.2	9.3	10.2	10.7	8.8	9.6
28	12.5	11.0	11.7	11.4	10.6	11.1	11.0	9.3	10.0	10.2	8.8	9.5
29	---	---	---	12.0	11.5	11.7	10.4	9.2	9.8	9.8	8.4	9.1
30	---	---	---	12.4	10.6	11.4	10.2	9.1	9.6	9.7	8.2	8.9
31	---	---	---	11.3	10.7	11.0	---	---	---	9.9	8.7	9.2
MONTH	13.2	10.1	11.5	12.8	9.6	11.2	12.2	9.1	10.5	10.7	8.2	9.4
YEAR	14.4	5.3	10.7									

03208036 BARTON FORK NEAR COUNCIL, VA

LOCATION.--Lat 37°04'37", long 82°02'21", Buchanan County, Hydrologic Unit 05070202, on left bank on private road, 180 ft upstream from mouth, 200 ft upstream from State Highway 620, 0.5 mi downstream from Coon Flat Branch, and 1.8 mi east of Council.

DRAINAGE AREA.--1.23 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to September 1983 (discontinued).

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Altitude of gage is 1,800 ft, from topographic map.

REMARKS.--Records good. Recording rain gage at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft^3/s Sept. 14, 1982, gage height, 2.52 ft, from rating curve extended above 24 ft^3/s; minimum daily, 0.02 ft^3/s Sept. 10, 11, 16-20, 25-30, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22 ft^3/s at 1545 hours Oct. 9, gage height, 2.20 ft, no other peak above base of 20 ft^3/s; minimum daily, 0.02 ft^3/s Sept. 10, 11, 16-20, 25-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.17	7.1	.98	.86	1.7	1.1	1.6	.75	.25	.05	.03
2	.13	.17	5.4	.91	3.2	1.4	1.4	1.4	.64	.20	.06	.03
3	.13	.22	2.8	.81	4.1	1.2	1.4	2.8	.81	.17	.04	.03
4	.12	1.1	1.8	.68	3.1	1.1	1.2	3.8	2.9	.19	.07	.03
5	.12	.66	1.4	.61	2.3	1.0	1.8	3.1	1.2	.60	1.5	.03
6	.11	.46	1.1	.61	2.4	1.0	1.9	2.3	.89	.29	.28	.03
7	.10	.38	.83	.59	2.4	.93	1.9	1.9	1.0	.21	.16	.03
8	.10	.33	.70	.54	1.9	.95	1.8	4.0	.76	.17	.13	.03
9	1.8	.30	.63	.74	1.7	.93	2.3	3.4	.63	.15	.10	.03
10	.83	.28	.59	.72	2.7	.94	3.3	2.8	.55	.14	.08	.02
11	.54	.26	.69	.85	4.6	.99	3.8	2.2	.48	.13	1.8	.02
12	.52	.42	.91	.76	3.6	1.1	3.4	1.9	.42	.12	.79	.03
13	3.0	.47	.74	.67	3.0	1.3	2.7	1.9	.38	.11	.25	.05
14	1.5	.39	.75	.68	2.9	1.4	2.2	1.7	.35	.10	.17	.04
15	.83	.35	2.3	.76	2.7	1.6	6.9	1.4	.33	.09	.13	.03
16	.56	.32	13	.71	2.8	1.5	6.3	5.4	.92	.09	.12	.02
17	.43	.31	5.6	.69	3.5	1.3	4.2	5.2	.55	.08	.11	.02
18	.36	.37	3.1	.54	3.5	1.6	3.4	3.5	.42	.09	.09	.02
19	.31	.32	2.3	.35	2.9	1.7	2.5	2.7	.50	.09	.08	.02
20	.42	.34	2.0	.50	2.1	1.7	2.0	2.1	.54	.08	.08	.02
21	.43	.34	1.6	.81	1.7	3.6	1.7	2.0	.41	.06	.06	.25
22	.32	.75	1.3	2.1	1.6	3.4	1.5	4.3	.35	.12	.05	.12
23	.28	.89	1.5	2.9	1.9	2.6	4.8	4.7	.30	.09	.05	.04
24	.27	1.5	1.6	2.9	1.8	2.1	13	3.6	.28	.20	.05	.03
25	.25	1.2	1.6	2.3	2.2	1.7	11	2.5	.25	.17	.05	.02
26	.23	.96	1.8	1.8	1.9	1.4	6.0	1.9	.23	.12	.05	.02
27	.21	.92	1.7	1.5	1.8	1.6	3.9	1.4	.21	.09	.14	.02
28	.20	1.8	1.7	1.3	1.7	1.4	2.9	1.2	.32	.07	.45	.02
29	.19	5.8	1.5	1.1	---	1.2	2.2	1.1	.38	.07	.09	.02
30	.18	2.7	1.2	1.1	---	.95	1.9	1.0	.30	.06	.05	.02
31	.17	---	1.1	.93	---	1.2	---	.85	---	.05	.04	---
TOTAL	14.78	24.48	70.34	32.44	70.86	46.49	104.4	79.65	18.05	4.45	7.17	1.12
MEAN	.48	.82	2.27	1.05	2.53	1.50	3.48	2.57	.60	.14	.23	.037
MAX	3.0	5.8	13	2.9	4.6	3.6	13	5.4	2.9	.60	1.8	.25
MIN	.10	.17	.59	.35	.86	.93	1.1	.85	.21	.05	.04	.02
CFSM	.39	.67	1.85	.85	2.06	1.22	2.83	2.09	.49	.11	.19	.03
IN.	.45	.74	2.13	.98	2.14	1.40	3.15	2.41	.55	.13	.22	.03

CAL YR 1982 TOTAL 673.98 MEAN 1.85 MAX 22 MIN .10 CFSM 1.50 IN 20.37
WTR YR 1983 TOTAL 474.23 MEAN 1.30 MAX 13 MIN .02 CFSM 1.06 IN 14.33

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to September 1983 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1981 to September 1983.
WATER TEMPERATURES: July 1981 to September 1983.
DISSOLVED OXYGEN: October 1982 to August 1983.

INSTRUMENTATION.--Water-quality monitor since July 17, 1981. Automatic pumping sampler since Aug. 14, 1981.

REMARKS.- Unpublished records of dissolved oxygen are available for some periods.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 437 micromhos Aug. 10, 1983; minimum, 110 micromhos Sept. 14, 1982.
WATER TEMPERATURES: Maximum, 26.5°C July 21, 1983; minimum, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 437 micromhos Aug. 10; minimum, 142 micromhos Dec. 16.
WATER TEMPERATURES: Maximum, 26.5°C July 21; minimum, 0.0°C Jan. 17-21.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CAr03)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT											
25...	1030	.24	310	7.9	8.0	--	130	75	30	13	9.7
NOV											
22...	0610	1.1	275	7.5	--	--	95	45	22	9.8	8.4
22...	0640	1.3	270	7.5	--	--	99	45	23	10	10
22...	0740	1.4	270	7.5	--	--	100	49	24	10	11
22...	0920	1.2	295	7.5	--	--	110	57	26	11	12
22...	1100	1.1	301	7.5	--	--	120	64	27	12	12
22...	1425	--	300	7.8	--	--	120	67	28	12	13
23...	1155	.79	290	7.9	--	--	110	59	25	11	10
DEC											
15...	1245	1.5	260	7.7	--	--	85	45	19	9.1	10
15...	1315	1.8	251	7.8	6.0	--	100	62	22	11	11
15...	1845	3.6	252	7.6	--	--	80	44	18	8.6	11
15...	2245	6.1	238	7.5	--	--	75	45	17	7.9	11
16...	0325	17	193	7.4	--	--	58	32	13	6.2	8.0
16...	1220	13	170	7.6	7.5	--	60	38	14	6.1	6.3
16...	1830	9.5	177	7.4	--	--	62	41	14	6.5	6.4
JAN											
20...	0930	.46	261	7.1	.0	--	100	66	23	11	9.6
FEB											
17...	1040	3.5	225	7.2	4.5	11.6	79	55	18	8.3	9.7
APR											
07...	1130	2.0	225	7.5	10.5	--	80	52	18	8.4	9.2
MAY											
16...	1150	8.4	195	7.7	12.0	9.4	74	45	17	7.6	8.1
AUG											
16...	1130	.12	338	7.8	18.0	8.4	130	68	32	13	12

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)
OCT											
25...	1.9	56	81	7.0	<.10	6.8	205	182	.49	.19	<.010
NOV											
22...	1.8	50	54	9.1	--	6.0	164	141	--	--	--
22...	2.0	54	51	9.9	--	5.7	163	144	--	--	--
22...	2.0	52	57	10	--	6.1	155	151	--	--	--
22...	2.1	53	61	14	--	6.5	161	164	--	--	--
22...	1.9	53	60	12	--	6.9	177	164	--	--	--
22...	1.9	52	67	12	--	7.5	185	173	--	--	--
23...	1.7	49	65	8.8	--	7.3	180	158	--	--	--
DEC											
15...	2.1	40	58	9.4	--	6.0	161	138	--	--	--
15...	1.8	39	60	10	<.10	7.0	157	146	1.0	.44	<.010
15...	2.0	36	42	13	--	6.5	144	123	--	--	--
15...	1.9	30	50	14	--	6.6	144	127	--	--	--
16...	1.8	26	40	9.3	--	5.9	116	100	--	--	--
16...	1.8	22	40	7.6	--	7.1	105	96	--	--	--
16...	1.7	21	46	7.7	--	7.1	69	102	--	--	--
JAN											
20...	1.8	37	73	9.5	<.10	7.3	160	157	--	.59	<.010
FEB											
17...	1.6	24	65	14	<.10	7.6	98	139	1.4	.76	.010
APR											
07...	1.7	28	58	10	<.10	7.1	141	129	--	.50	<.010
MAY											
16...	1.6	29	50	8.5	<.10	6.9	130	117	.53	.43	<.010
AUG											
16...	2.5	66	84	6.4	<.10	8.2	218	198	--	<.10	<.010

< Actual value is known to be less than the value shown.

DATE	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	ARSENIC TOTAL IN BOTTOM MATERIAL (UG/G AS AS)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)
OCT											
25...	--	<.10	--	--	<.010	<.010	--	2	1	<1	<10
NOV											
22...	--	--	--	--	--	--	100	--	--	--	--
22...	--	--	--	--	--	--	<100	--	--	--	--
22...	--	--	--	--	--	--	100	--	--	--	--
22...	--	--	--	--	--	--	<100	--	--	--	--
22...	--	--	--	--	--	--	<100	--	--	--	--
22...	--	--	--	--	--	--	<100	--	--	--	--
23...	--	--	--	--	--	--	<100	--	--	--	--
DEC											
15...	--	--	--	--	--	--	100	--	--	--	--
15...	--	.60	.00	.60	.050	<.010	--	--	--	--	--
15...	--	--	--	--	--	--	100	--	--	--	--
15...	--	--	--	--	--	--	100	--	--	--	--
16...	--	--	--	--	--	--	200	--	--	--	--
16...	--	--	--	--	--	--	100	1	<1	--	<10
16...	--	--	--	--	--	--	100	--	--	--	--
JAN											
20...	--	.30	--	<.10	.020	.020	--	--	--	--	--
FEB											
17...	.59	.50	.00	.60	<.010	<.010	--	--	--	--	--
APR											
07...	--	.30	--	<.10	.020	<.010	--	--	--	--	--
MAY											
16...	--	.20	.10	.10	.080	<.010	--	--	--	--	--
AUG											
16...	--	.40	--	<.10	<.020	.020	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	BERYL-LIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)
OCT											
25...	<1	<1	10	<1	<1	<1	20	10	1	2	2
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	60	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
16...	<1	--	--	2	<1	--	10	10	--	3	1
16...	--	--	--	--	--	--	--	--	--	--	--
JAN											
20...	--	--	10	--	--	--	--	--	--	--	--
FEB											
17...	--	--	10	--	--	--	--	--	--	--	--
APR											
07...	--	--	10	--	--	--	--	--	--	--	--
MAY											
16...	--	--	20	--	--	--	--	--	--	--	--
AUG											
16...	--	--	70	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

DATE	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT										
25...	8	110	38	1	1	<10	30	22	.3	.2
NOV										
22...	--	3000	250	--	--	--	160	24	--	--
22...	--	6500	68	--	--	--	270	13	--	--
22...	--	4600	97	--	--	--	230	18	--	--
22...	--	970	22	--	--	--	70	24	--	--
22...	--	570	37	--	--	--	50	24	--	--
22...	--	280	38	--	--	--	30	14	--	--
23...	--	150	26	--	--	--	30	21	--	--
DEC										
15...	--	2000	34	--	--	--	120	32	--	--
15...	--	2500	23	--	--	--	150	38	--	--
15...	--	2900	23	--	--	--	150	28	--	--
15...	--	4000	41	--	--	--	190	23	--	--
16...	--	9500	200	--	--	--	510	91	--	--
16...	--	1400	17	5	1	--	120	17	<.1	<.1
16...	--	1000	20	--	--	--	100	19	--	--
JAN										
20...	--	240	19	--	--	--	50	45	--	--
FEB										
17...	--	480	17	--	--	--	50	31	--	--
APR										
07...	--	950	10	--	--	--	70	27	--	--
MAY										
16...	--	3300	34	--	--	--	210	24	--	--
AUG										
16...	--	320	28	--	--	--	50	29	--	--

< Actual value is known to be less than the value shown.

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	MERCURY RECOV. FM BOTTOM MATERIAL (UG/G AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SELENIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	ZINC, RECOV. FM BOTTOM MATERIAL (UG/G AS ZN)
OCT										
25...	<.01	2	3	<10	<1	<1	<1	50	7	11
NOV										
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
DEC										
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	15	1	--	<1	<1	--	20	<4	--
16...	--	--	--	--	--	--	--	--	--	--
JAN										
20...	--	--	--	--	--	--	--	--	--	--
FEB										
17...	--	--	--	--	--	--	--	--	--	--
APR										
07...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	--	--	--	--	--	--	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, DECEMBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)
DEC			
04...	0845	.20	75
04...	0935	.21	21
04...	1135	.21	72
15...	1145	.48	28
22...	1315	1.5	76
24...	0945	1.6	23
JAN			
03...	0250	2.6	392
03...	0350	8.8	2750
03...	0810	20	1560
03...	1815	10	212
05...	0100	9.7	168
19...	1500	8.3	415
21...	0855	11	218
FEB			
03...	0255	19	1510
03...	1055	28	283
03...	1100	27	296
03...	1105	27	305
03...	1425	21	162
15...	2045	1.4	101
16...	1050	1.4	8
16...	1200	2.9	80
16...	1505	5.1	386
16...	2345	8.8	38
17...	0855	14	98
17...	1130	15	277
JUN			
01...	1540	9.5	131
01...	1545	9.7	92
09...	0835	9.5	2500
10...	1130	10	414
17...	1600	1.7	145
JUL			
19...	2040	1.4	1420
19...	2050	2.9	2660
19...	2115	2.9	24000
19...	2130	1.4	8960
19...	2155	1.4	5400
22...	1745	1.4	1090
22...	1755	2.9	5640
22...	1830	3.1	7450
22...	1835	2.9	13000
22...	1840	3.1	6980
22...	1920	1.6	1830
28...	1750	1.4	1570
28...	1755	2.9	6300
28...	1758	4.9	9340
28...	1815	2.9	11800
28...	1905	1.4	2210
29...	1805	1.4	1290
29...	1850	2.9	3900
29...	1905	2.9	3130
29...	2000	1.4	1120
29...	2105	1.4	509
29...	2255	1.4	307
31...	0655	1.4	381
31...	0715	2.9	6120
31...	0735	2.9	2770
31...	0750	2.9	1850
31...	0800	2.9	1100
31...	1600	1.4	86
31...	2040	1.4	173
31...	2045	1.4	257
31...	2105	1.4	378

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, DECEMBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)
AUG			
09...	1230	.58	857
09...	1235	.58	1380
09...	1237	.58	1410
31...	1105	.89	58
31...	1130	.85	75
31...	1200	.82	53
SEP			
01...	0610	1.0	940
01...	0620	1.8	1370
01...	0650	1.9	1960
01...	0700	3.2	2000
01...	0720	3.1	2580
01...	0730	2.9	1980
01...	0800	2.3	645
01...	0820	2.0	353
01...	0840	1.8	287
01...	0844	1.8	236
01...	0850	1.7	226
01...	0930	1.6	155
01...	1000	2.0	283
14...	0910	9.0	4780
14...	0912	9.0	4580

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)
NOV			
22...	0710	1.4	195
22...	0810	1.4	70
22...	0830	1.3	47
22...	0850	1.3	38
22...	0950	1.2	24
22...	1010	1.1	25
22...	1030	1.1	17
22...	1130	1.0	11
22...	1150	1.0	11
22...	1210	1.0	9
DEC			
15...	1325	1.8	83
15...	1405	2.2	90
15...	1406	2.2	96
15...	1445	2.4	87
15...	1450	2.4	89
15...	1725	3.1	72
15...	1925	3.8	74
15...	2005	4.3	120
15...	2125	5.1	138
15...	2325	7.4	298
16...	0045	10	625
16...	0205	15	750
16...	0245	17	588
16...	0405	18	356
16...	1220	13	64
FEB			
02...	1155	4.3	90
02...	1330	4.0	65
02...	1530	3.6	57
02...	1730	3.6	28
02...	1930	3.6	26
02...	2030	4.4	137
02...	2230	4.4	45
03...	0030	4.4	28
03...	0330	4.3	20
03...	0630	4.2	16
APR			
15...	0955	7.7	117
25...	1530	10	49
25...	1540	9.8	44
MAY			
03...	1342	2.6	164
03...	1525	4.9	248
04...	0900	3.9	15
16...	1110	9.0	164
16...	1345	7.2	69
16...	1545	6.5	42
17...	1010	5.3	17
21...	2355	4.4	912
22...	0200	5.3	140
22...	0400	4.0	42
22...	1520	3.8	83
22...	1720	4.6	54
22...	1920	5.7	68
22...	2120	5.1	33
22...	2320	4.8	25
23...	0720	4.8	22
23...	1720	4.3	18
23...	1920	5.1	44

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)
JUN			
04...	0210	4.5	1380
04...	0310	9.0	1370
04...	0510	6.1	216
16...	1610	2.4	1750
16...	1620	4.8	2410
19...	2200	2.4	968
29...	1340	1.7	1270
29...	1510	.75	1310
29...	1610	.69	391
JUL			
04...	2310	.66	576
05...	0520	.69	121
05...	0650	1.1	266
05...	0820	.92	96
05...	0950	.72	45
22...	1750	.69	928
24...	1600	.72	1280
AUG			
05...	0730	.72	762
05...	0740	1.7	1560
05...	0750	5.3	7610
05...	0830	10	4990
05...	1000	6.8	685
05...	1130	2.6	227
05...	1132	2.6	193
05...	1300	1.6	129
05...	1420	1.1	79
05...	1730	.63	51
05...	2030	.46	39
11...	1850	.79	34
11...	1905	2.6	678
11...	1930	4.8	1610
11...	2010	15	1640
11...	2040	16	9670
11...	2110	11	4800
11...	2240	5.9	1240
12...	0010	3.5	287
12...	0310	1.8	65
12...	0610	1.2	45

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMMOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	345	337	342	330	325	328	241	208	219	251	248	249
2	346	338	343	331	327	330	227	209	217	252	249	250
3	350	339	344	331	300	325	242	226	234	256	249	253
4	351	341	346	327	300	312	249	243	246	259	253	255
5	351	346	349	306	301	304	256	248	251	259	243	252
6	356	346	350	304	301	303	262	255	259	247	245	246
7	367	348	352	314	299	304	274	261	264	250	248	248
8	367	350	353	308	300	304	282	264	273	253	249	251
9	352	159	309	309	301	305	282	279	281	258	242	250
10	297	280	291	311	302	307	283	279	281	258	253	256
11	304	298	301	312	307	310	282	261	276	259	244	254
12	306	302	304	316	257	304	279	255	268	252	247	250
13	291	253	270	310	304	306	282	278	280	250	247	249
14	293	271	284	303	299	300	284	272	280	252	247	249
15	285	278	281	301	298	299	279	223	263	251	239	244
16	289	284	286	300	297	299	217	142	159	248	242	245
17	291	284	288	301	293	299	184	161	174	249	244	245
18	293	282	287	334	289	315	195	184	190	254	246	249
19	292	285	290	334	329	331	212	194	204	259	244	253
20	292	257	287	334	328	331	224	209	218	---	241	---
21	312	286	302	333	329	331	236	223	229	---	220	---
22	324	301	307	328	274	312	243	234	237	248	221	238
23	314	306	310	309	256	301	268	240	255	235	220	224
24	316	309	312	292	275	288	264	253	258	219	214	216
25	328	307	316	284	280	282	253	248	250	216	214	215
26	324	320	322	284	273	281	252	241	249	221	216	218
27	324	321	323	289	280	285	252	247	248	225	220	222
28	325	321	323	289	228	276	246	242	244	228	224	226
29	327	322	324	237	228	232	244	242	243	233	229	231
30	329	323	326	249	233	241	248	244	245	238	233	235
31	329	325	327	---	---	---	248	244	246	244	239	241
MONTH	367	159	314	334	228	302	284	142	243	259	214	242

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	247	244	245	231	228	229	252	248	249	259	234	239
2	247	214	230	235	230	232	250	213	244	269	239	244
3	222	203	211	241	234	237	243	239	240	244	216	235
4	209	201	204	244	239	241	240	237	239	222	203	211
5	215	208	211	248	243	244	239	215	234	227	198	210
6	234	207	215	251	245	248	234	225	228	233	201	211
7	---	---	---	254	248	250	224	220	222	234	215	221
8	---	---	---	253	246	250	225	222	223	220	194	208
9	240	236	237	259	252	255	227	204	223	219	196	203
10	264	230	241	260	253	257	226	206	220	219	198	204
11	228	219	224	262	249	256	213	204	208	223	205	210
12	227	224	225	297	260	271	208	204	206	233	214	222
13	229	223	227	288	275	280	216	208	212	245	222	229
14	232	228	230	274	253	261	222	216	219	255	233	239
15	234	229	232	253	244	248	223	180	191	253	235	239
16	237	230	233	244	241	242	188	179	182	245	185	210
17	235	220	225	243	240	241	196	188	193	212	184	194
18	219	214	216	249	234	241	206	194	200	219	193	203
19	223	216	219	246	242	245	225	206	215	228	203	213
20	232	223	228	242	232	238	225	221	223	248	218	227
21	238	232	235	232	211	223	224	222	223	261	203	233
22	240	232	238	210	205	207	225	223	224	251	199	225
23	247	239	244	214	207	210	225	158	206	257	202	226
24	248	239	244	220	214	217	165	157	161	265	208	243
25	250	239	245	227	218	222	177	163	168	270	219	239
26	244	237	240	234	227	230	197	177	188	273	222	235
27	237	232	234	239	222	234	219	198	205	280	232	246
28	233	230	231	242	237	239	255	211	224	284	240	247
29	---	---	---	247	242	245	256	220	229	253	247	250
30	---	---	---	248	244	247	251	229	234	285	249	259
31	---	---	---	250	243	248	---	---	---	263	258	260
MONTH	264	201	229	297	205	242	256	157	214	285	184	227

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	268	263	265	324	320	322	388	351	374	353	341	347
2	273	267	269	335	325	327	392	355	376	353	346	349
3	274	233	270	332	327	329	396	354	377	360	346	350
4	274	193	241	334	280	328	418	346	381	354	347	350
5	286	245	265	314	271	302	389	235	319	371	348	352
6	299	264	269	324	316	319	---	---	---	353	339	349
7	286	253	270	331	321	325	408	339	380	354	349	352
8	276	271	273	336	328	331	414	385	402	388	344	353
9	301	274	279	338	331	334	423	393	411	352	345	349
10	301	273	284	341	336	338	437	410	417	352	341	348
11	291	285	287	345	338	342	427	264	380	350	344	348
12	324	272	296	348	340	344	320	272	299	350	344	348
13	325	276	298	353	346	349	336	321	328	367	317	334
14	301	290	297	356	349	352	342	331	336	376	336	346
15	302	297	300	355	351	354	---	---	---	361	338	342
16	302	189	282	361	354	356	---	---	---	341	337	339
17	294	275	287	364	356	359	344	339	341	357	336	341
18	298	293	295	368	353	360	349	339	344	353	335	343
19	306	255	294	369	357	362	352	345	348	342	331	339
20	299	271	289	376	356	364	355	347	350	341	323	333
21	300	296	298	402	363	372	361	349	353	343	249	303
22	306	298	302	396	291	364	357	349	353	345	340	342
23	305	270	294	373	349	361	357	348	353	380	337	348
24	328	306	316	378	260	340	358	349	353	---	---	---
25	339	322	332	358	323	345	358	348	353	---	---	---
26	341	334	337	362	333	352	358	347	352	---	---	---
27	335	321	326	372	351	359	357	257	343	---	---	---
28	323	286	313	370	357	362	348	304	338	343	327	336
29	321	266	314	380	343	365	349	344	346	---	---	---
30	320	316	318	391	355	372	352	344	348	218	161	179
31	---	---	---	388	367	371	352	343	347	---	---	---
MONTH	341	189	292	402	260	347	437	235	357	388	161	337
YEAR	437	142	278									

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.5	12.5	14.5	15.0	9.5	12.0	12.0	10.5	11.5	7.0	5.0	6.0
2	18.5	13.0	15.0	15.5	10.5	12.5	13.0	11.0	12.0	7.0	6.0	6.5
3	18.5	13.5	16.0	16.0	12.0	13.5	13.0	11.5	12.0	5.5	3.5	5.0
4	19.5	15.0	17.0	13.5	8.5	11.0	13.0	11.5	12.0	3.5	1.5	3.0
5	20.0	15.5	17.0	8.5	6.0	7.0	13.5	11.5	12.5	3.5	1.5	2.5
6	20.5	14.5	17.0	7.0	4.5	5.5	11.5	9.5	10.5	5.0	2.5	3.5
7	19.0	15.0	17.0	7.5	4.0	5.5	9.5	7.0	8.5	6.5	4.0	5.0
8	20.5	16.5	17.5	9.0	4.5	6.5	8.0	6.0	7.0	5.5	2.5	4.0
9	18.0	16.0	17.0	10.0	5.5	7.5	7.5	4.5	6.5	5.5	4.5	5.0
10	20.0	16.5	17.5	10.5	6.5	8.0	7.5	3.5	5.5	8.5	5.0	6.5
11	17.0	15.0	16.5	12.0	8.0	10.0	8.0	4.0	7.0	6.5	4.5	6.0
12	16.0	14.5	15.0	13.0	10.0	11.5	4.5	2.5	3.5	4.0	1.5	3.0
13	15.0	14.5	14.5	10.5	5.5	7.5	2.5	.5	2.0	3.0	1.5	2.0
14	14.5	13.0	14.0	7.5	4.0	5.5	4.0	1.5	2.5	4.5	1.5	3.0
15	14.5	12.0	13.5	7.0	4.5	6.0	7.0	3.5	5.5	4.0	1.0	2.0
16	13.0	10.0	12.0	6.0	3.0	4.5	8.0	7.0	7.5	2.0	.5	1.0
17	11.5	8.0	9.5	8.5	4.5	6.5	7.0	5.5	6.5	2.0	.0	1.0
18	12.0	8.0	10.0	11.0	8.5	9.5	6.5	4.5	5.5	.5	.0	.0
19	12.5	8.5	10.5	12.0	8.5	10.0	7.0	5.5	6.0	.0	.0	.0
20	13.5	10.0	12.0	12.5	10.0	11.0	6.0	5.0	5.5	.5	.0	.0
21	13.0	10.5	11.5	13.5	11.5	12.5	5.5	3.5	5.0	2.0	.0	1.0
22	11.5	8.5	10.0	13.5	11.5	12.0	5.5	3.0	4.0	4.5	2.0	3.5
23	10.0	6.5	8.0	13.5	11.0	12.0	7.5	5.5	6.5	5.5	4.0	4.5
24	9.5	6.0	7.5	12.5	7.0	10.0	9.0	6.0	7.5	4.5	4.0	4.0
25	9.5	7.5	8.5	8.5	5.5	7.0	11.0	8.5	9.5	4.5	4.0	4.0
26	10.0	5.5	7.5	10.0	6.5	8.0	10.5	9.5	10.0	5.5	3.0	4.0
27	11.0	5.5	7.5	9.5	9.0	9.0	11.5	9.0	10.0	5.5	3.5	4.5
28	11.5	6.0	8.0	11.0	9.0	10.0	12.0	9.5	10.5	5.5	3.0	4.5
29	11.5	6.5	8.5	11.0	9.5	10.5	9.5	6.5	8.5	6.5	2.5	4.0
30	13.5	8.0	10.5	11.0	9.0	10.0	6.5	5.0	6.0	7.5	4.5	5.5
31	14.5	9.0	11.0	---	---	---	7.0	4.5	6.0	7.0	4.0	5.0
MONTH	20.5	5.5	12.5	16.0	3.0	9.0	13.5	.5	7.5	8.5	.0	3.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.0	3.0	5.0	8.5	4.5	6.0	11.5	5.0	8.0	18.0	11.5	14.0
2	8.5	6.5	7.5	8.5	3.5	5.5	10.0	6.5	8.0	15.0	12.5	13.5
3	6.5	4.0	5.0	10.0	4.0	6.5	7.0	6.0	6.5	13.0	11.5	12.0
4	3.5	2.5	3.0	11.5	5.0	8.0	12.5	5.5	8.5	13.5	9.5	11.0
5	4.5	2.0	3.0	13.0	6.5	9.5	9.0	7.0	8.0	14.0	9.5	11.0
6	5.0	2.5	4.0	13.0	9.0	10.5	12.0	8.0	9.5	15.5	8.0	11.5
7	---	---	---	13.0	7.5	10.0	12.0	9.0	10.5	17.5	10.0	13.0
8	---	---	---	12.5	8.5	10.0	12.5	9.5	10.5	13.0	10.0	12.0
9	5.0	2.0	3.5	9.0	6.5	8.0	13.0	10.0	11.0	13.5	8.5	10.5
10	5.5	3.5	4.5	6.5	4.5	5.5	12.5	8.0	10.0	15.0	7.5	10.5
11	4.5	3.0	4.0	4.5	3.5	4.0	8.0	7.5	7.5	16.0	8.5	12.0
12	4.0	3.5	4.0	7.5	3.5	4.5	13.0	7.0	9.5	15.5	10.0	12.5
13	5.0	3.0	4.0	9.0	3.0	5.5	13.0	8.5	10.5	13.5	12.0	12.5
14	6.0	3.5	4.5	10.5	4.5	7.0	12.0	9.5	10.5	17.0	11.5	14.0
15	6.0	3.0	4.0	11.5	5.5	8.0	10.5	8.0	9.0	14.5	12.5	13.5
16	7.0	3.0	5.0	11.5	6.5	8.5	11.0	6.5	8.5	13.0	10.5	12.0
17	7.0	4.0	5.0	9.0	6.5	7.5	10.0	6.5	7.5	14.0	9.5	11.5
18	7.0	4.5	5.5	9.0	7.5	8.0	7.0	5.0	6.0	15.0	10.0	12.0
19	7.5	3.5	5.0	8.5	6.5	8.0	7.5	4.0	5.5	14.0	11.5	12.5
20	8.0	4.0	5.5	11.0	5.5	8.0	10.0	4.5	6.5	15.5	11.5	13.5
21	8.5	4.0	6.0	8.5	5.0	7.0	11.0	4.0	7.0	15.5	12.5	14.0
22	9.0	4.5	6.5	6.0	4.0	4.5	9.5	5.0	7.5	14.5	13.0	14.0
23	8.0	6.5	7.0	8.0	3.5	5.0	9.0	7.5	8.0	15.0	12.5	13.5
24	6.5	5.0	5.5	7.0	3.5	4.5	8.0	7.0	8.0	15.0	11.5	13.0
25	5.0	3.0	4.0	9.0	3.0	5.0	10.5	6.0	8.0	15.5	10.5	12.5
26	5.5	2.5	3.5	9.0	3.0	5.5	13.0	6.5	9.0	15.5	11.5	13.0
27	6.5	1.5	3.5	10.0	5.5	7.5	14.5	7.5	10.5	15.0	9.5	12.0
28	7.5	3.0	5.5	7.0	5.0	6.0	15.0	8.5	11.0	15.0	10.5	12.0
29	---	---	---	5.5	4.5	5.0	14.5	10.0	12.0	16.0	12.0	14.0
30	---	---	---	8.5	3.5	6.0	15.0	11.0	12.5	17.0	12.0	14.0
31	---	---	---	7.5	6.0	6.5	---	---	---	14.5	12.0	13.0
MONTH	9.0	1.5	5.0	13.0	3.0	7.0	15.0	4.0	9.0	18.0	7.5	12.5

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	11.0	12.5	22.0	16.5	19.0	22.5	19.5	20.5	23.5	17.5	20.5
2	16.5	9.5	13.0	23.5	17.0	19.5	22.5	19.0	21.0	21.0	18.0	19.5
3	15.5	12.5	14.0	23.5	17.5	20.0	25.5	19.0	22.0	22.5	17.5	20.0
4	15.0	13.5	14.0	23.0	18.0	20.0	24.0	20.0	21.5	22.5	18.5	20.5
5	17.5	12.0	14.5	19.5	17.0	18.0	22.0	19.0	20.0	24.5	19.0	21.5
6	18.0	13.0	15.0	19.5	15.5	17.5	23.5	18.5	20.5	24.5	19.5	21.5
7	14.5	13.5	14.5	20.0	12.5	16.0	24.0	19.0	21.0	23.5	19.5	21.5
8	18.0	12.0	14.5	21.5	13.5	17.0	25.0	18.5	21.5	24.5	19.5	21.5
9	18.5	12.0	15.0	21.5	14.0	17.5	24.5	19.0	21.5	25.0	18.0	21.0
10	19.0	13.0	15.5	20.5	15.0	17.5	24.0	19.5	21.5	24.5	18.5	21.5
11	19.0	13.0	16.0	22.5	15.5	18.5	25.0	19.5	21.5	24.0	18.5	21.5
12	19.5	13.5	16.5	22.0	15.0	18.5	20.0	18.0	19.5	23.5	20.0	21.5
13	20.5	13.5	16.5	23.0	17.0	19.5	20.5	16.5	18.0	20.5	19.0	20.0
14	19.5	13.5	16.5	23.5	18.0	20.5	21.0	16.0	18.0	21.0	17.5	19.0
15	20.0	15.0	17.0	24.5	18.0	21.0	---	---	---	19.0	14.0	16.5
16	20.0	15.0	16.5	23.5	18.5	21.0	---	---	---	19.0	15.0	17.0
17	18.5	15.0	16.0	24.5	19.0	21.5	21.5	16.5	19.0	21.5	16.5	18.5
18	19.0	15.0	17.0	22.5	18.5	20.5	23.5	18.0	20.5	24.0	15.5	19.5
19	20.0	15.5	17.5	23.0	18.0	20.5	24.0	19.0	21.0	23.0	17.0	20.0
20	19.0	16.0	17.0	26.0	19.0	22.0	26.0	18.5	21.5	22.5	17.5	19.5
21	20.0	15.5	17.0	26.5	20.0	23.0	26.0	19.5	22.0	20.0	14.0	17.0
22	21.5	15.5	18.0	26.0	21.0	22.5	24.5	19.5	22.0	---	---	---
23	21.5	15.5	18.0	26.0	20.0	22.5	25.0	20.0	22.0	---	---	---
24	22.0	15.5	18.5	23.0	20.5	21.5	24.5	19.5	21.5	---	---	---
25	22.5	16.5	19.0	20.5	18.5	19.5	25.5	19.0	22.0	---	---	---
26	22.5	16.0	19.0	23.0	17.5	20.0	24.5	18.5	21.0	---	---	---
27	22.5	18.0	19.5	22.0	17.0	19.5	24.0	20.0	21.5	---	---	---
28	20.0	17.0	18.5	23.0	17.0	19.5	23.5	19.5	21.0	---	---	---
29	20.0	17.0	18.0	23.0	17.0	20.0	23.5	19.5	21.0	---	---	---
30	20.5	16.5	18.5	24.0	17.5	20.5	24.5	17.0	20.5	---	---	---
31	---	---	---	22.5	18.0	20.5	24.0	17.5	20.5	---	---	---
MONTH	22.5	9.5	16.5	26.5	12.5	20.0	26.0	16.0	21.0	25.0	14.0	20.0
YEAR	26.5	.0	11.5									

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, OCTOBER 1982 TO AUGUST 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.2	7.8	8.4	10.0	8.8	9.3						
2	9.1	7.6	8.2	9.8	8.6	9.1						
3	9.0	7.5	8.1	9.4	8.4	8.9						
4	8.7	7.3	7.9	10.1	8.8	9.5						
5	9.4	7.5	8.2	10.8	10.1	10.5						
6	9.1	8.1	8.5	11.3	10.6	10.9						
7	8.7	7.9	8.2	11.3	10.4	10.9						
8	8.2	7.6	7.9	11.1	10.1	10.6						
9	8.4	7.8	8.1	10.9	9.7	10.3						
10	8.5	8.0	8.3	10.7	9.8	10.2						
11	8.8	8.4	8.5	10.3	9.4	9.8						
12	9.0	8.6	8.8	9.5	6.8	9.1						
13	9.0	8.8	8.9	11.0	9.7	10.6						
14	9.2	9.0	9.1	11.4	10.4	10.9						
15	9.5	8.8	9.1	11.2	10.5	10.9						
16	9.8	9.1	9.4	11.8	10.7	11.2						
17	10.3	9.5	9.9	11.1	10.1	10.6						
18	10.2	9.3	9.8	10.5	10.0	10.2						
19	10.1	9.3	9.6	10.5	9.9	10.2						
20	9.8	8.8	9.3	10.2	9.7	10.0						
21	9.6	9.1	9.4	10.0	9.5	9.7						
22	10.1	9.6	9.8	9.8	9.5	9.7						
23	10.7	9.7	10.2	9.9	9.4	9.7						
24	10.7	9.7	10.2	10.9	9.5	10.2						
25	10.1	9.7	9.9	11.3	10.4	10.8						
26	10.9	9.9	10.3	10.9	10.1	10.5						
27	10.9	9.7	10.3	10.4	10.2	10.3						
28	10.8	9.6	10.1	10.2	9.6	9.9						
29	10.6	9.5	10.0	9.8	9.6	9.7						
30	10.1	9.1	9.7	9.9	9.4	9.6						
31	10.2	8.9	9.5	---	---	---						
MONTH	10.9	7.3	9.2	11.8	6.8	10.1						

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	11.5	10.5	11.1	11.5	10.2	10.8	9.8	8.7	9.3
2	---	---	---	11.9	10.6	11.3	10.8	10.0	10.5	9.6	8.9	9.2
3	---	---	---	11.8	10.3	11.1	11.1	10.8	10.9	9.5	9.2	9.3
4	---	---	---	11.4	10.0	10.8	11.5	9.9	10.7	10.4	9.5	9.8
5	---	---	---	11.1	9.8	10.5	11.0	10.6	10.8	10.2	9.3	9.8
6	---	---	---	10.4	9.6	10.1	10.7	9.9	10.4	10.6	9.1	9.8
7	---	---	---	10.9	9.7	10.3	10.4	9.9	10.2	10.1	8.7	9.4
8	---	---	---	10.5	9.7	10.2	10.3	9.7	10.1	9.8	9.2	9.4
9	13.1	11.8	12.4	11.0	10.4	10.6	10.3	9.7	9.9	10.6	9.4	10.0
10	12.0	11.5	11.8	11.5	11.0	11.2	10.6	9.8	10.3	10.7	9.2	10.0
11	12.1	11.7	11.9	11.9	11.5	11.8	10.9	10.7	10.8	10.4	9.0	9.7
12	12.1	11.9	12.0	11.9	10.9	11.6	11.1	9.8	10.5	10.1	9.0	9.5
13	12.2	11.6	11.9	12.1	10.5	11.4	10.7	9.7	10.2	9.5	9.1	9.3
14	11.9	11.2	11.6	11.6	10.1	11.0	10.3	9.8	10.0	9.6	8.6	9.1
15	12.2	11.1	11.7	11.4	10.0	10.8	10.8	10.0	10.4	9.2	8.8	9.0
16	11.9	10.8	11.4	11.1	10.0	10.7	11.2	10.2	10.7	9.7	8.9	9.3
17	11.7	10.9	11.3	11.0	10.5	10.7	11.0	10.4	10.8	10.3	9.3	9.8
18	11.6	10.9	11.3	10.7	10.3	10.5	11.4	10.9	11.1	10.0	9.1	9.6
19	11.8	10.8	11.4	11.0	10.4	10.7	11.6	10.9	11.3	9.8	9.1	9.4
20	11.9	10.8	11.4	11.3	10.0	10.6	11.8	10.6	11.2	9.6	8.8	9.2
21	11.8	10.6	11.3	11.5	10.3	10.8	11.7	10.2	11.0	9.4	8.7	9.0
22	11.5	10.4	11.0	11.8	11.4	11.6	11.3	10.2	10.7	9.2	8.7	8.9
23	10.9	10.6	10.8	12.0	10.8	11.6	10.5	10.1	10.3	9.5	8.7	9.1
24	11.3	10.9	11.1	11.9	11.0	11.6	10.6	10.2	10.3	9.5	8.9	9.2
25	12.0	11.3	11.6	12.2	10.7	11.5	11.0	10.1	10.6	9.8	8.7	9.2
26	12.4	11.6	12.1	12.2	10.6	11.5	11.0	9.8	10.4	9.5	8.8	9.3
27	12.6	11.2	12.0	11.3	10.1	10.8	10.7	9.5	10.1	10.1	8.8	9.4
28	12.0	10.8	11.4	11.5	10.8	11.1	10.5	9.4	9.9	9.6	8.8	9.2
29	---	---	---	11.8	11.4	11.6	10.0	9.2	9.6	9.1	8.5	8.8
30	---	---	---	12.0	10.7	11.3	9.8	9.1	9.5	9.3	8.4	8.8
31	---	---	---	11.1	10.8	11.0	---	---	---	9.6	8.8	9.1
MONTH	13.1	10.4	11.6	12.2	9.6	11.0	11.8	9.1	10.5	10.7	8.4	9.4

03208036 BARTON FORK NEAR COUNCIL, VA--Continued

OXYGEN, DISSOLVED (DO), MG/L, OCTOBER 1982 TO AUGUST 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST	
1	9.7	9.0	9.3	7.5	6.5	7.1	7.1	5.8	6.3
2	10.0	8.7	9.3	7.4	6.3	7.0	7.1	5.7	6.3
3	9.3	8.5	8.9	7.3	6.2	6.9	7.2	5.7	6.3
4	9.2	8.7	8.9	7.3	6.7	7.0	7.0	5.5	6.0
5	9.4	8.3	8.9	7.4	7.1	7.2	6.9	6.1	6.5
6	9.1	8.2	8.6	7.5	7.2	7.4	---	---	---
7	8.9	8.5	8.7	8.3	7.2	7.7	---	---	---
8	9.3	8.3	8.9	8.1	6.9	7.5	---	---	---
9	9.4	8.2	8.8	7.9	7.0	7.4	---	---	---
10	9.3	8.2	8.7	7.7	6.9	7.3	---	---	---
11	9.2	8.1	8.6	7.6	6.7	7.1	---	---	---
12	9.1	8.0	8.5	7.8	6.7	7.2	---	---	---
13	9.1	7.9	8.5	7.5	6.4	6.9	---	---	---
14	9.1	7.9	8.5	7.2	6.3	6.7	---	---	---
15	8.9	7.9	8.3	7.1	6.0	6.5	---	---	---
16	8.9	7.9	8.4	7.0	6.1	6.6	---	---	---
17	8.9	8.2	8.5	7.0	6.2	6.5	---	---	---
18	8.8	8.0	8.4	7.1	6.2	6.6	---	---	---
19	8.7	7.7	8.2	6.9	5.8	6.4	---	---	---
20	8.7	7.9	8.2	6.7	5.5	6.1	---	---	---
21	8.6	7.9	8.2	6.6	4.9	5.8	---	---	---
22	8.5	7.5	8.1	6.3	5.3	5.9	---	---	---
23	8.5	7.5	8.0	6.4	5.6	6.1	---	---	---
24	8.7	7.5	8.0	6.4	5.7	6.0	---	---	---
25	8.6	7.5	8.0	7.1	6.1	6.5	---	---	---
26	8.7	7.4	8.0	7.1	6.2	6.6	---	---	---
27	8.2	6.6	7.5	7.0	6.3	6.7	---	---	---
28	9.1	7.0	7.4	7.1	6.1	6.6	---	---	---
29	7.4	7.0	7.2	7.1	6.2	6.6	---	---	---
30	7.6	7.0	7.3	7.3	5.9	6.5	---	---	---
31	---	---	---	7.0	5.8	6.4	---	---	---
MONTH	10.0	6.6	8.4	8.3	4.9	6.7	7.2	5.5	6.3
YEAR	13.1	4.9	9.4						

03208040 RUSSELL FORK AT COUNCIL, VA

LOCATION.--Lat 37°04'41", long 82°03'56", Buchanan County, Hydrologic Unit 05070202, on left bank 50 ft upstream from bridge on State Highway 80, 750 ft downstream from Ball Creek, 0.6 mi southeast of Council, and 4.7 mi upstream from Hurricane Creek.

DRAINAGE AREA.--10.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1981 to September 1983 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Altitude of gage is 1,680 ft, from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 260 ft³/s Sept. 14, 1982, gage height, 2.60 ft, from rating curve extended above 140 ft³/s; minimum, 0.13 ft³/s Sept. 10-12, 27-29, 30, 1983, gage height, 0.61 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 138 ft³/s Dec. 16, gage height, 1.99 ft, no peak above base of 150 ft³/s; minimum, 0.13 ft³/s Sept. 10-12, 27-29, 30, gage height, 0.61 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	1.1	51	8.0	7.4	15	8.8	13	6.1	1.5	.30	.17
2	.92	1.1	46	7.5	19	13	11	11	5.1	1.3	.30	.17
3	.90	1.8	25	7.0	22	12	13	17	5.9	1.6	.29	.17
4	.80	9.0	17	6.1	18	11	12	24	17	1.2	.28	.17
5	.80	7.5	15	5.2	15	9.9	15	22	9.0	4.8	8.1	.16
6	.69	5.8	11	5.0	16	9.2	17	18	7.2	2.3	1.6	.16
7	.69	4.2	8.6	5.0	16	8.7	18	15	8.0	1.5	.91	.15
8	.73	3.4	7.5	4.5	14	8.5	17	23	6.0	1.2	.70	.15
9	9.4	3.0	6.8	6.1	13	8.0	18	22	4.9	1.1	.54	.15
10	6.6	2.8	6.3	5.9	16	7.8	25	19	4.3	.96	.32	.15
11	4.2	2.6	6.9	7.0	31	7.8	29	16	4.0	.90	6.3	.13
12	3.3	4.1	8.5	6.4	27	7.8	25	14	3.6	.79	4.7	.21
13	17	4.4	7.5	5.8	22	8.5	21	14	3.2	.70	1.5	.42
14	13	3.4	7.6	5.7	20	9.6	17	12	3.0	.56	1.0	.35
15	7.9	3.3	18	6.4	21	11	55	11	2.8	.57	.71	.17
16	5.2	3.1	102	6.0	21	11	52	34	5.6	.51	.57	.17
17	3.3	3.1	45	5.8	23	10	32	39	3.9	.48	.47	.16
18	2.8	3.5	25	4.5	22	11	25	26	3.1	.62	.44	.16
19	2.6	3.1	19	3.0	19	11	19	19	3.1	.72	.32	.15
20	3.1	3.1	15	4.2	16	10	16	15	3.6	.54	.27	.15
21	3.6	3.4	13	6.2	14	23	14	14	3.0	.42	.22	2.1
22	2.5	9.8	11	15	13	25	13	31	2.5	.60	.22	.93
23	2.2	14	11	24	15	19	36	32	2.3	.83	.22	.34
24	2.1	15	11	23	14	16	117	27	2.0	1.1	.17	.21
25	2.1	14	12	20	16	13	86	19	1.8	1.1	.17	.17
26	1.8	12	13	16	17	11	45	15	1.7	.85	.17	.17
27	1.7	11	14	13	18	12	28	12	1.5	.53	.62	.13
28	1.5	15	14	11	17	10	20	9.9	2.4	.39	1.6	.13
29	1.3	45	12	9.4	---	8.2	17	9.1	2.3	.34	.46	.14
30	1.3	27	10	9.2	---	7.5	14	8.3	1.9	.33	.26	.16
31	1.2	---	8.5	8.1	---	9.3	---	7.1	---	.32	.21	---
TOTAL	106.15	239.6	578.2	270.0	502.4	354.8	835.8	568.4	130.8	30.76	33.94	8.15
MEAN	3.42	7.99	18.7	8.71	17.9	11.4	27.9	18.3	4.36	.99	1.09	.27
MAX	17	45	102	24	31	25	117	39	17	4.8	8.1	2.1
MIN	.69	1.1	6.3	3.0	7.4	7.5	8.8	7.1	1.5	.32	.17	.13
CFSM	.34	.78	1.83	.85	1.76	1.12	2.74	1.79	.43	.10	.11	.03
IN.	.39	.87	2.11	.98	1.83	1.29	3.05	2.07	.48	.11	.12	.03

CAL YR 1982 TOTAL 5341.14 MEAN 14.6 MAX 128 MIN .56 CFSM 1.43 IN 19.48
WTR YR 1983 TOTAL 3659.00 MEAN 10.0 MAX 117 MIN .13 CFSM .98 IN 13.34

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978, February 1981 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: June 1981 to January 1983.

INSTRUMENTATION.--Water-quality monitor since June 18, 1981. Automatic pumping sampler since Aug. 14, 1981.

REMARKS.--Unpublished records of specific conductance and dissolved oxygen are available for some periods. Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum recorded, 29.0°C July 11, 1981; minimum, 0.0°C on several days during winter periods.

WATER QUALITY DATA, OCTOBER 1982 TO JANUARY 1983

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
NOV											
22...	1050	12	180	7.6	66	20	15	7.0	6.7	2.1	46
22...	1140	13	175	7.7	69	24	16	7.1	5.9	2.3	45
22...	1455	13	173	7.6	69	27	16	7.0	5.6	2.2	42
23...	1135	14	140	7.6	56	23	13	5.7	4.6	1.7	33
DEC											
16...	0105	63	126	7.4	43	18	9.6	4.6	6.8	1.9	25
16...	1025	128	99	7.4	35	18	7.5	3.9	3.2	1.7	17
16...	1325	112	98	7.3	35	19	7.6	3.8	3.2	1.5	16
16...	1750	82	105	7.3	35	18	7.7	3.8	3.1	1.4	17

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	ALUMINUM, DISSOLVED (UG/L AS AL)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
NOV										
22...	27	7.0	5.8	109	98	<100	1000	79	60	3
22...	27	7.5	6.0	114	99	<100	980	59	80	4
22...	26	6.6	6.7	101	95	<100	840	54	50	4
23...	24	5.2	7.7	86	82	<100	230	53	30	11
DEC										
16...	20	9.3	6.7	78	74	100	12000	97	700	8
16...	21	4.1	7.5	65	59	100	3000	47	190	9
16...	21	3.9	7.3	64	58	100	2700	28	160	10
16...	22	3.9	7.0	66	59	100	2100	36	130	9

< Actual value is known to be less than the value shown.

03208040 RUSSELL FORK AT COUNCIL, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO JANUARY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.0	13.0	15.5	---	---	---	12.0	10.0	11.0	7.0	4.0	5.5
2	19.5	13.5	16.0	---	---	---	13.5	10.5	11.5	7.0	5.0	6.0
3	18.5	14.5	16.5	---	---	---	14.0	11.0	12.0	5.0	2.0	4.0
4	19.0	15.5	17.5	---	---	---	14.5	11.0	12.0	4.5	.0	2.0
5	19.0	16.5	17.5	---	---	---	14.0	11.5	13.0	---	---	---
6	---	---	---	8.5	3.0	5.5	11.0	8.5	10.0	---	---	---
7	---	---	---	10.0	3.0	5.5	9.5	6.0	8.0	---	---	---
8	---	---	---	10.5	3.5	6.5	8.0	4.0	6.0	---	---	---
9	---	---	---	12.0	5.0	8.0	6.5	3.0	5.0	---	---	---
10	---	---	---	12.5	6.0	8.5	6.5	2.0	4.5	---	---	---
11	---	---	---	12.5	7.5	10.0	7.0	2.5	6.0	---	---	---
12	---	---	---	14.5	10.5	12.0	3.5	.0	2.0	---	---	---
13	---	---	---	10.0	4.0	7.5	1.0	.0	.0	---	---	---
14	---	---	---	7.5	3.0	5.0	2.0	.0	1.0	---	---	---
15	---	---	---	8.5	3.5	6.0	7.5	1.5	4.5	---	---	---
16	---	---	---	8.0	1.5	4.5	8.0	7.0	7.5	---	---	---
17	---	---	---	8.0	3.5	6.0	7.0	5.0	6.5	---	---	---
18	---	---	---	10.5	8.0	9.0	6.5	3.5	5.0	---	---	---
19	---	---	---	13.0	8.0	10.0	6.5	5.0	5.5	---	---	---
20	---	---	---	12.5	10.0	11.0	6.0	4.0	5.0	---	---	---
21	---	---	---	14.0	11.0	12.5	5.5	2.5	4.0	---	---	---
22	---	---	---	14.5	11.5	12.5	5.0	1.5	3.5	---	---	---
23	---	---	---	13.5	10.5	12.0	8.5	4.5	6.0	---	---	---
24	---	---	---	12.5	6.0	9.5	10.0	5.0	7.5	---	---	---
25	---	---	---	8.0	4.5	6.0	13.0	9.0	10.5	---	---	---
26	---	---	---	9.5	5.0	7.5	11.5	10.0	10.5	---	---	---
27	---	---	---	9.0	8.0	8.5	12.0	9.0	10.5	---	---	---
28	---	---	---	11.0	8.0	9.5	13.0	10.0	11.5	---	---	---
29	---	---	---	11.5	9.0	10.5	10.0	6.0	8.0	---	---	---
30	---	---	---	11.5	8.0	9.5	6.5	4.0	5.0	---	---	---
31	---	---	---	---	---	---	7.5	3.5	5.0	---	---	---
MONTH	19.5	13.0	16.5	14.5	1.5	8.5	14.5	.0	7.0	7.0	.0	4.5

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA

LOCATION.--Lat 37°09'50", long 82°15'20", Dickenson County, Hydrologic Unit 05070202, on right bank 125 ft upstream from bridge on State Highway 80, 150 ft upstream from Fryingpan Creek, 1.3 mi southeast of Birchleaf, and 3.5 mi southeast of Haysi.

DRAINAGE AREA.--87.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to September 1983 (discontinued as a continuous-record station; converted to a crest-stage partial-record station).

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft, from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,470 ft³/s Sept. 14, 1982, gage height, 8.85 ft, from rating curve extended above 1,200 ft³/s; minimum, 1.2 ft³/s Sept. 14, 15, 1981, Sept. 28-30, 1983; minimum gage height, 1.12 ft Sept. 14, 15, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	0940	1140	5.48	Apr. 24	0350	*1500	6.17

Minimum discharge, 1.2 ft³/s Sept. 28-30; minimum gage height, 1.16 ft Aug. 23-27, Sept. 10-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	12	336	66	64	123	56	103	51	12	3.1	3.2
2	8.2	12	404	61	130	107	63	89	44	10	3.1	2.7
3	8.1	16	220	56	286	92	91	128	42	15	3.1	2.6
4	8.2	68	147	47	198	80	91	376	141	16	3.1	2.6
5	8.1	99	115	42	146	74	101	269	98	60	6.1	2.6
6	7.6	68	93	41	135	71	117	183	73	34	26	2.5
7	7.8	51	70	40	134	72	128	142	93	18	9.5	2.3
8	8.3	41	59	39	124	72	125	178	84	13	6.0	2.3
9	34	34	54	40	121	71	130	180	64	11	4.3	2.3
10	78	28	49	50	128	71	183	160	50	9.7	3.4	2.3
11	39	25	50	60	314	71	209	133	40	9.0	5.2	2.1
12	30	27	65	56	303	75	188	112	34	8.1	56	2.3
13	118	43	49	54	225	87	158	122	30	7.4	13	3.3
14	156	36	50	52	196	101	131	124	26	6.8	7.1	4.9
15	82	35	63	58	210	100	468	111	24	6.5	4.9	4.8
16	53	32	749	56	207	92	498	275	23	6.0	4.2	3.5
17	36	31	402	52	206	85	277	387	44	5.6	4.5	3.0
18	27	38	215	40	194	82	203	232	37	6.2	4.5	2.5
19	23	37	157	27	160	81	162	165	27	9.6	3.5	2.3
20	20	39	138	36	125	67	132	129	50	7.4	3.1	2.3
21	30	42	119	66	103	93	112	116	30	6.1	2.8	5.2
22	22	213	103	150	92	103	101	294	23	5.1	2.5	14
23	19	223	100	270	105	98	190	425	19	5.0	2.3	6.0
24	18	145	95	230	100	90	1090	278	17	5.4	2.1	3.0
25	18	107	90	170	114	83	728	186	15	6.6	2.1	2.1
26	17	91	101	130	121	71	387	139	14	6.5	2.1	1.6
27	15	82	112	120	124	72	240	105	13	6.0	4.7	1.4
28	14	101	113	98	125	73	178	83	13	4.6	9.5	1.4
29	14	312	103	84	---	61	143	74	15	4.0	9.0	1.2
30	13	238	83	80	---	53	119	74	13	3.5	4.9	1.2
31	13	---	73	72	---	55	---	59	---	3.3	3.7	---
TOTAL	953.5	2326	4577	2443	4490	2526	6799	5431	1247	327.4	219.4	93.5
MEAN	30.8	77.5	148	78.8	160	81.5	227	175	41.6	10.6	7.08	3.12
MAX	156	312	749	270	314	123	1090	425	141	60	56	14
MIN	7.6	12	49	27	64	53	56	59	13	3.3	2.1	1.2
CFSM	.35	.89	1.69	.90	1.83	.93	2.60	2.00	.48	.12	.08	.04
IN.	.41	.99	1.95	1.04	1.91	1.08	2.89	2.31	.53	.14	.09	.04

CAL YR 1982 TOTAL 39897.5 MEAN 109 MAX 1050 MIN 4.2 CFSM 1.25 IN 16.98
WTR YR 1983 TOTAL 31432.8 MEAN 86.1 MAX 1090 MIN 1.2 CFSM .99 IN 13.38

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978, July 1981 to January 1983 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1982 to January 1983.
WATER TEMPERATURES: April 1982 to January 1983.

INSTRUMENTATION.--Automatic pumping sampler since Aug. 13, 1981. Water-quality monitor since Apr. 14, 1982.

REMARKS.--Unpublished records of daily dissolved oxygen are available for some periods.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 603 micromhos July 30, 1982; minimum, 72 micromhos May 20, 1982.
WATER TEMPERATURES: Maximum, 30.5°C July 17, 25, 1982; minimum, 0.0°C Dec. 13-15, 1982.

WATER QUALITY DATA, OCTOBER 1982 TO JANUARY 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)
NOV											
22...	0615	72	185	7.7	66	22	15	7.0	9.0	1.2	44
22...	0930	147	165	7.6	57	17	13	6.0	7.2	1.4	40
22...	1045	224	150	7.4	53	16	12	5.5	6.2	1.3	37
22...	1205	285	135	7.4	49	16	11	5.3	5.5	1.2	33
22...	1345	322	118	7.4	42	14	9.6	4.3	4.4	1.5	28
22...	1650	345	115	7.4	42	18	9.4	4.5	3.8	1.3	24
22...	2355	297	120	7.3	42	17	9.5	4.4	4.1	1.3	25
23...	1020	226	115	7.4	42	19	9.4	4.5	3.8	1.4	23
DEC											
16...	1355	977	106	7.4	34	11	7.4	3.7	3.1	1.7	23
16...	1455	938	101	7.3	32	12	7.0	3.5	3.1	1.5	20
16...	1650	854	94	7.3	32	14	6.9	3.5	2.9	1.4	18

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV										
22...	36	3.4	5.3	110	103	<100	640	60	40	7
22...	31	3.1	5.4	101	91	<100	2000	93	130	7
22...	28	2.7	5.8	96	84	<100	2700	97	200	6
22...	24	2.6	6.5	75	76	100	3500	66	200	5
22...	22	2.3	7.1	76	68	<100	4400	99	250	8
22...	23	1.7	7.5	74	66	<100	4200	82	230	3
22...	24	2.4	7.7	81	68	<100	1400	62	70	2
23...	22	1.9	8.7	78	66	<100	890	51	60	5
DEC										
16...	22	2.4	7.2	66	61	100	7100	54	470	37
16...	22	2.3	7.2	63	59	100	8600	52	470	37
16...	21	2.1	7.2	60	56	100	5600	63	360	32

< Actual value is known to be less than the value shown.

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), OCTOBER 1982 TO JANUARY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	406	390	396	299	296	297	122	110	118	179	170	176
2	421	397	407	302	298	300	109	100	103	185	177	180
3	439	409	418	301	283	295	130	110	119	191	185	187
4	441	409	425	285	242	265	140	130	135	203	191	196
5	424	418	421	236	162	190	148	139	144	214	203	208
6	418	414	416	161	155	157	157	146	152	---	---	---
7	414	411	412	166	157	162	173	158	168	---	---	---
8	415	412	413	172	166	169	176	169	173	---	---	---
9	415	314	388	183	172	177	186	174	180	---	---	---
10	412	215	260	195	183	187	195	186	190	---	---	---
11	235	220	228	205	196	200	204	195	200	---	---	---
12	240	236	238	209	205	206	194	183	187	---	---	---
13	239	181	225	216	206	210	197	181	186	---	---	---
14	175	152	156	220	203	212	219	187	205	---	---	---
15	173	157	164	222	215	218	214	185	201	---	---	---
16	190	174	182	223	213	218	181	82	110	---	---	---
17	206	191	199	212	195	206	105	85	94	---	---	---
18	224	207	214	205	201	203	120	106	114	---	---	---
19	233	224	228	213	204	209	136	122	131	---	---	---
20	240	234	238	210	200	204	145	136	142	---	---	---
21	269	239	252	199	190	195	156	145	151	---	---	---
22	275	251	260	188	110	143	167	155	162	---	---	---
23	260	241	248	116	110	112	163	159	162	---	---	---
24	268	248	256	138	116	127	172	162	167	---	---	---
25	284	259	265	148	138	144	171	165	167	---	---	---
26	295	268	281	152	146	148	171	153	163	---	---	---
27	332	289	313	151	147	149	153	143	146	---	---	---
28	332	324	327	149	139	145	154	147	151	---	---	---
29	334	324	329	144	109	127	159	153	155	---	---	---
30	323	305	315	121	107	112	162	157	160	---	---	---
31	305	296	298	---	---	---	170	162	165	---	---	---
MONTH	441	152	296	302	107	190	219	82	155	214	170	189

03208100 RUSSELL FORK NEAR BIRCHLEAF, VA--Continued

TEMPERATURE, WATER (DEG. C), OCTOBER 1982 TO JANUARY 1983

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.5	16.0	18.0	13.5	10.0	11.5	12.0	10.0	11.0	5.0	4.0	4.5
2	21.5	16.0	18.5	15.0	10.5	12.5	12.5	11.0	11.5	5.5	5.0	5.0
3	21.5	17.0	19.0	14.0	12.0	13.0	12.5	11.0	12.0	5.5	3.5	5.0
4	22.0	18.0	20.0	13.0	9.5	12.0	12.5	11.0	12.0	3.5	1.5	2.5
5	22.0	18.5	20.0	9.5	7.0	8.0	13.0	12.0	12.5	2.0	.5	1.0
6	22.5	18.5	20.0	6.5	5.0	6.0	12.5	10.0	11.5	---	---	---
7	20.5	18.5	19.5	6.0	4.5	5.0	10.0	7.5	8.5	---	---	---
8	22.0	19.0	20.0	6.5	4.5	5.5	7.5	5.5	6.5	---	---	---
9	19.5	18.5	19.0	7.5	5.0	6.5	5.5	4.0	5.0	---	---	---
10	20.0	18.5	19.0	9.0	6.0	7.5	4.0	3.0	3.5	---	---	---
11	19.5	18.0	19.0	9.5	7.5	8.5	5.5	4.0	5.0	---	---	---
12	18.0	16.5	17.0	11.0	9.0	10.0	3.5	1.5	3.0	---	---	---
13	16.5	14.5	15.5	10.5	6.5	9.0	1.5	.0	.5	---	---	---
14	15.0	14.0	14.5	6.5	5.5	6.0	1.5	.0	.5	---	---	---
15	15.0	13.0	14.0	6.5	4.5	5.5	1.0	.0	.5	---	---	---
16	14.5	12.0	13.5	5.5	3.0	4.0	7.5	1.0	5.5	---	---	---
17	12.5	10.5	11.5	5.5	3.5	4.5	7.0	5.5	6.0	---	---	---
18	12.5	9.5	10.5	7.5	5.5	6.5	5.0	3.5	4.5	---	---	---
19	13.0	10.0	11.0	10.0	7.5	8.5	5.0	4.0	4.5	---	---	---
20	12.0	10.5	11.5	11.0	9.5	10.5	5.5	5.0	5.0	---	---	---
21	12.5	11.5	12.0	12.0	11.0	11.5	5.0	3.5	4.5	---	---	---
22	12.5	10.0	11.0	13.0	12.0	12.5	3.5	2.0	2.5	---	---	---
23	11.0	9.0	10.0	12.5	11.5	12.0	5.5	3.5	4.5	---	---	---
24	9.5	8.0	9.0	12.5	8.5	11.0	7.0	5.0	6.0	---	---	---
25	9.5	8.5	9.0	8.5	6.0	7.0	10.5	7.0	8.5	---	---	---
26	10.0	7.0	8.5	8.0	5.5	6.5	11.0	10.5	11.0	---	---	---
27	10.0	6.5	8.0	8.5	8.0	8.0	11.5	10.5	11.0	---	---	---
28	10.0	6.5	8.0	10.0	8.5	9.0	12.0	10.5	11.5	---	---	---
29	10.5	6.5	8.5	11.0	10.0	10.5	11.5	8.0	10.0	---	---	---
30	12.0	8.0	10.0	10.0	8.5	9.5	7.5	5.0	6.0	---	---	---
31	13.0	9.0	10.5	---	---	---	5.0	4.0	4.5	---	---	---
MONTH	22.5	6.5	14.0	15.0	3.0	8.5	13.0	.0	6.5	5.5	.5	3.5

03208500 RUSSELL FORK AT HAYSI, VA

LOCATION.--Lat 37°12'25", long 82°17'45", Dickenson County, Hydrologic Unit 05070202, on right bank 180 ft downstream from bridge on State Highway 63, at Haysi, and 700 ft downstream from McClure River.

DRAINAGE AREA.--286 mi².

PERIOD OF RECORD.--July 1926 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1003: 1926-43. WSP 1385: 1928(M), 1929, 1933(M), 1935(M), 1937-38(M).

GAGE.--Water-stage recorder. Datum of gage is 1,237.61 ft National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1939, nonrecording gage at highway bridge 180 ft upstream at same datum.

REMARKS.--Records good. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 332 ft³/s, 15.76 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,000 ft³/s Apr. 4, 1977, gage height, 28.24 ft, from rating curve extended above 32,000 ft³/s on basis of slope-area measurement of peak flow; minimum observed, 0.2 ft³/s June 27, 28, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,090 ft³/s Apr. 24, gage height, 6.49 ft, no peak above base of 4,500 ft³/s; minimum daily, 10 ft³/s Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	42	1010	251	208	433	206	327	209	38	26	23
2	41	41	1250	230	574	388	237	289	183	35	26	20
3	40	61	772	214	986	337	376	395	178	76	28	18
4	38	493	526	183	689	298	350	1360	512	106	26	17
5	37	484	405	164	505	274	369	940	378	388	35	16
6	35	266	347	160	463	265	413	603	283	201	93	15
7	34	175	255	157	454	260	429	450	323	93	59	14
8	35	129	209	145	404	267	414	571	299	65	40	13
9	120	101	186	148	388	267	422	575	240	50	30	12
10	272	87	167	190	418	272	565	492	196	45	25	11
11	148	80	172	187	1000	284	629	411	162	41	30	10
12	113	85	219	188	960	290	580	354	143	38	431	20
13	360	137	156	177	737	320	504	439	126	35	109	123
14	483	110	160	171	656	357	432	516	113	33	57	63
15	246	104	190	187	725	349	1250	449	104	30	41	41
16	151	92	2050	179	711	318	1450	1060	97	24	33	28
17	96	89	1260	167	725	291	881	1360	158	24	36	24
18	77	113	734	130	683	281	673	841	128	41	38	22
19	67	119	555	90	576	276	551	610	141	56	30	18
20	63	137	498	110	463	235	452	484	168	51	26	14
21	77	146	430	170	383	303	398	465	118	36	23	17
22	68	764	367	628	343	324	360	800	95	30	21	77
23	59	817	351	878	393	299	531	1360	72	30	18	46
24	56	523	327	695	379	283	3360	1060	65	29	20	30
25	54	371	302	519	430	271	2390	736	55	47	24	24
26	51	309	365	423	440	240	1250	545	48	44	23	18
27	48	279	422	359	443	247	771	418	43	35	27	15
28	47	360	414	306	449	254	550	334	42	29	98	13
29	45	998	376	270	---	217	441	296	45	26	58	12
30	44	831	312	261	---	193	373	291	40	23	35	11
31	44	---	275	232	---	207	---	239	---	22	27	---
TOTAL	3093	8343	15062	8169	15585	8900	21607	19070	4764	1821	1593	785
MEAN	99.8	278	486	264	557	287	720	615	159	58.7	51.4	26.2
MAX	483	998	2050	878	1000	433	3360	1360	512	388	431	123
MIN	34	41	156	90	208	193	206	239	40	22	18	10
CFSM	.35	.97	1.70	.92	1.95	1.00	2.52	2.15	.56	.21	.18	.09
IN.	.40	1.09	1.96	1.06	2.03	1.16	2.81	2.48	.62	.24	.21	.10

CAL YR 1982 TOTAL 138163 MEAN 379 MAX 3250 MIN 25 CFSM 1.33 IN 17.97

WTR YR 1983 TOTAL 108792 MEAN 298 MAX 3360 MIN 10 CFSM 1.04 IN 14.15

03208680 NORTH FORK POUND RIVER LAKE AT POUND, VA

LOCATION.--Lat 37°07'27", long 82°37'52", Wise County, Hydrologic Unit 05070202, in control tower of North Fork Pound Dam at Pound, 1,200 ft upstream from Stacy Branch, and 1.2 mi upstream from South Fork Pound River.

DRAINAGE AREA.--17.2 mi^2.

PERIOD OF RECORD.--July 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 29, 1966, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by rockfill dam. Spillway with crest at elevation 1,644.0 ft is in a saddle 350 ft southeast of dam. Except during major floods, all discharge will be through a diversion tunnel, the invert of the entrance of which is at elevation 1,556.5 ft. Storage began in September 1964 during construction with peak discharge affected thereafter; initial filling for regular operation started July 13, 1966. Total capacity at elevation 1,644.0 ft, top of spillway, is 11,290 acre-ft of which 8,110 acre-ft is flood-control storage for summer operations between elevations 1,611.0 ft top of summer conservation pool, and 1,644.0 ft; an additional 1,290 acre-ft is available for flood control during the period December to March between elevations 1,601.0 ft, top of winter conservation pool, and 1,611.0 ft; contents at established minimum pool, 1,601.0 ft, is 1,900 acre-ft; dead storage is 7 acre-ft below elevation 1,556.5 ft. Figures given herein represent total contents. Lake is used for flood control, low-water augmentation for water-quality control, and recreation. Corps of Engineers satellite telemeter at station.

COOPERATION.--Capacity tables furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,920 acre-ft Apr. 8, 1977, elevation, 1,629.41 ft; minimum (after initial filling for regular operation), 1,660 acre-ft Jan. 23, 1969, elevation, 1,598.62 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,820 acre-ft Apr. 25, elevation, 1,614.88 ft; minimum, 1,980 acre-ft Feb. 1, elevation, 1,601.83 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1611.23	3220	
Oct. 31	1606.82	2590	-630
Nov. 30	1603.47	2170	-420
Dec. 31	1602.43	2050	-120
CAL YR 1982			+10
Jan. 31	1601.92	1990	-60
Feb. 28	1602.68	2080	+90
Mar. 31	1602.44	2050	-30
Apr. 30	1611.37	3240	+1190
May 31	1611.59	3280	+40
June 30	1610.61	3130	-150
July 31	1609.67	2980	-150
Aug. 31	1608.97	2880	-100
Sept. 30	1607.73	2710	-170
WTR YR 1983			-510

03208700 NORTH FORK POUND RIVER AT POUND, VA.

LOCATION.--Lat 37°07'32", long 82°37'36", Wise County, Hydrologic Unit 05070202, on right bank at Pound, 700 ft downstream from Stacy Branch, 1,600 ft downstream from North Fork Pound River Dam, and 0.9 mi upstream from confluence with South Fork.

DRAINAGE AREA.--18.5 mi^2.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,500.00 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1965, on left bank at datum 44.88 ft higher.

REMARKS.--Records fair. Flow regulated since August 1966 by North Fork Pound River Lake (station 03208680). Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--22 years, 29.2 ft^3/s, 21.43 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,480 ft^3/s Mar. 12, 1963, gage height, 61.58 ft, present datum, from rating curve extended above 650 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.02 ft^3/s Sept. 16, 1964, Aug. 11, 12, Oct. 28, Nov. 10, 1969; minimum daily, 0.04 ft^3/s Sept. 15, 1964, Aug. 11, 1969; minimum gage height, 47.66 ft Sept. 16, 1964, present datum. Maximum discharge since construction of North Fork Pound River Dam in 1966, 1,230 ft^3/s Sept. 14, 1982, gage height, 55.79 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 63.9 ft, present datum, from Corps of Engineers floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 377 ft^3/s May 16, gage height, 51.72 ft; minimum daily, 2.8 ft^3/s July 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	18	80	19	24	70	7.3	28	15	3.9	3.0	3.5
2	21	19	123	18	65	40	5.5	15	15	3.9	3.0	3.5
3	22	18	91	27	142	27	6.7	30	11	3.9	3.0	3.5
4	19	28	42	30	109	27	6.4	129	17	4.1	3.0	3.5
5	14	43	42	28	42	27	6.1	115	19	4.8	3.0	3.5
6	15	26	42	22	42	27	6.1	45	19	4.3	3.0	3.5
7	15	26	37	17	42	21	6.1	25	15	3.3	3.0	3.5
8	15	45	31	14	41	13	5.8	33	8.0	3.0	3.0	3.5
9	15	65	30	14	37	13	6.1	71	7.0	3.0	3.0	3.5
10	15	53	30	14	31	17	6.1	65	8.0	3.0	3.0	3.5
11	20	51	30	20	54	23	6.4	39	7.7	3.0	3.3	3.5
12	22	30	31	22	64	23	6.1	30	7.7	3.0	3.2	3.7
13	34	20	30	22	63	25	5.8	30	5.3	3.0	3.0	3.5
14	37	20	27	19	63	42	5.8	31	4.3	3.0	3.0	3.0
15	37	27	23	15	51	50	9.9	32	4.1	3.0	3.0	3.0
16	29	30	46	15	37	49	9.9	219	3.7	2.8	3.0	3.0
17	26	30	95	15	60	48	7.3	278	3.7	3.0	3.0	3.0
18	25	63	65	15	52	34	7.0	237	3.7	3.2	3.0	3.0
19	25	56	42	15	28	16	6.4	146	3.7	3.0	3.0	3.0
20	25	37	52	15	27	16	7.3	34	3.7	3.0	3.0	3.0
21	26	36	51	15	27	39	9.5	36	3.7	3.0	3.0	3.2
22	20	72	42	18	26	49	14	52	3.7	3.0	3.0	3.0
23	19	113	37	20	56	39	19	77	3.7	3.0	3.5	3.0
24	19	90	30	51	54	23	29	61	3.7	3.0	3.5	3.0
25	19	52	30	64	32	23	207	30	3.7	3.0	3.5	3.0
26	19	41	32	63	28	23	254	23	3.7	3.0	3.5	3.0
27	19	26	39	55	28	23	182	12	3.7	3.0	3.5	3.0
28	18	28	75	40	58	23	74	7.3	3.9	3.0	3.5	3.0
29	18	46	69	29	---	15	34	6.7	3.9	3.0	3.5	3.0
30	18	53	37	29	---	12	28	6.7	3.9	3.0	3.5	3.0
31	18	---	19	28	---	12	---	12	---	3.0	3.5	---
TOTAL	660	1262	1450	788	1383	889	984.6	1955.7	219.2	100.2	98.0	96.9
MEAN	21.3	42.1	46.8	25.4	49.4	28.7	32.8	63.1	7.31	3.23	3.16	3.23
MAX	37	113	123	64	142	70	254	278	19	4.8	3.5	3.7
MIN	14	18	19	14	24	12	5.5	6.7	3.7	2.8	3.0	3.0
(*)	-10	-7	-2	-1	+2	.00	+20	+1	-3	-2	-2	-3
MEAN‡	11.3	35.1	44.8	24.4	51.4	28.7	52.8	64.1	4.31	1.23	1.16	.23
CFSM‡	.61	1.90	2.42	1.32	2.78	1.55	2.85	3.46	.23	.07	.06	.01
IN‡	.70	2.12	2.79	1.52	2.89	1.79	3.19	3.99	.26	.08	.07	.01

CAL YR 1982 TOTAL 12039.5 MEAN 33.0 MAX 305 MIN 3.2 MEAN‡ 33.0 CFSM‡ 1.78 IN‡ 24.21
WTR YR 1983 TOTAL 9886.6 MEAN 27.1 MAX 278 MIN 2.8 MEAN‡ 26.1 CFSM‡ 1.41 IN‡ 19.15

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake; furnished by Corps of Engineers.

‡ Adjusted for change in contents.

03208950 CRANES NEST RIVER NEAR CLINTWOOD, VA

LOCATION.--Lat 37°07'26", long 82°26'20", Dickenson County, Hydrologic Unit 05070202, on left bank on State Highway 649, 500 ft downstream from Clinchfield Railway bridge, 1,000 ft downstream from Rush Creek, and 2.1 mi southeast of Clintwood.

DRAINAGE AREA.--66.5 mi².

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WDR VA-77-1: 1967(M).

GAGE.--Water-stage recorder. Datum of gage is 1,440.30 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Corps of Engineers gage-height telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--20 years, 82.5 ft³/s, 16.85 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s Apr. 4, 1977, gage height, 26.09 ft, from floodmark, from rating curve extended above 3,100 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.48 ft³/s Sept. 28, 1964, gage height, 0.91 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of about 20.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 911 ft³/s Feb. 2, gage height, 6.42 ft, no peak above base of 1,000 ft³/s; minimum, 4.3 ft³/s Sept. 20, 21, gage height, 1.19 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	16	254	57	50	90	49	79	59	19	6.2	8.0
2	22	16	251	53	428	80	89	71	52	16	5.8	7.7
3	20	58	174	50	323	72	148	163	50	16	23	9.6
4	18	363	130	45	182	68	124	357	173	15	11	7.9
5	17	178	107	43	127	63	121	214	101	68	14	7.2
6	18	96	100	42	113	62	121	151	78	33	15	5.9
7	18	65	76	41	110	56	113	114	120	24	21	5.1
8	19	50	67	37	92	65	103	163	87	18	12	7.5
9	28	42	60	44	86	64	105	142	68	16	9.2	5.7
10	41	38	56	52	95	63	120	120	57	14	10	7.5
11	29	35	57	50	212	65	128	100	48	13	39	6.9
12	25	38	68	47	182	61	122	86	41	12	185	5.8
13	99	57	57	42	150	68	108	136	37	14	42	23
14	78	41	60	41	143	67	96	164	36	11	24	9.6
15	52	38	78	44	160	67	249	133	36	13	17	8.3
16	41	35	362	40	137	63	233	337	32	9.9	15	7.8
17	32	35	233	38	159	58	167	291	30	11	16	8.9
18	26	50	158	31	146	61	144	182	30	11	12	8.1
19	24	53	127	25	125	58	125	137	38	12	11	5.8
20	24	56	115	30	103	50	103	107	33	11	9.4	4.8
21	29	53	95	40	89	75	91	154	31	12	12	11
22	24	230	81	158	80	71	81	330	26	9.4	11	20
23	22	190	78	201	91	64	164	484	22	7.4	12	9.6
24	22	136	72	150	84	59	536	385	19	11	10	8.1
25	19	98	67	114	97	56	437	217	19	15	9.5	7.7
26	18	81	87	91	92	53	251	157	22	15	8.9	6.1
27	19	82	92	78	89	56	176	120	21	9.8	21	5.1
28	19	119	89	69	90	56	134	98	24	8.0	15	6.0
29	19	276	81	61	---	49	108	90	20	7.5	11	6.2
30	18	190	69	59	---	47	90	91	17	8.1	8.4	6.0
31	17	---	64	53	---	52	---	72	---	7.8	8.2	---
TOTAL	879	2815	3465	1926	3835	1939	4636	5445	1427	467.9	624.6	246.9
MEAN	28.4	93.8	112	62.1	137	62.5	155	176	47.6	15.1	20.1	8.23
MAX	99	363	362	201	428	90	536	484	173	68	185	23
MIN	17	16	56	25	50	47	49	71	17	7.4	5.8	4.8
CFSM	.43	1.41	1.68	.93	2.06	.94	2.33	2.65	.72	.23	.30	.12
IN.	.49	1.57	1.94	1.08	2.15	1.08	2.59	3.05	.80	.26	.35	.14

CAL YR 1982 TOTAL 33778.6 MEAN 92.5 MAX 1410 MIN 9.4 CFSM 1.39 IN 18.90
WTR YR 1983 TOTAL 27706.4 MEAN 75.9 MAX 536 MIN 4.8 CFSM 1.14 IN 15.5[illegible]

03208990 JOHN W. FLANNAGAN RESERVOIR NEAR HAYSI, VA

LOCATION.--Lat 37°14'00", long 82°20'56", Dickenson County, Hydrologic Unit 05070202, in control tower of John W. Flannagan Dam on Pound River, 1.3 mi upstream from Blacklog Branch, and 3.7 mi northwest of Haysi.

DRAINAGE AREA.--221 mi².

PERIOD OF RECORD.--September 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Mar. 31, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by rockfill dam. Spillway with crest at elevation 1,410.0 ft is in a saddle 0.3 mi upstream from dam and is equipped with 6 radial gates 36 ft high by 42 ft wide. Except during major floods, all discharge will be through a diversion tunnel, the invert of the entrance of which is at elevation 1,230.0 ft. Storage began in September 1961 during construction with peak discharge affected thereafter; initial filling for regular operations started in March 1965. Total capacity at elevation 1,446.0 ft, top of gates, is 145,700 acre-ft of which 78,600 acre-ft is controlled flood storage for summer operations between elevations 1,396.0 ft, top of summer conservation pool, and 1,446.0 ft; an additional 16,500 acre-ft is available for flood control during the period December to March between elevations 1,380.0 ft, top of winter conservation pool, and 1,396.0 ft; contents at established minimum pool, 1,314.0 ft, is 12,000 acre-ft; dead storage is 300 acre-ft below elevation 1,230.0 ft. Figures given herein represent total contents. Reservoir is used for flood control, low-water augmentation for water-quality control, and recreation. Corps of Engineers satellite and gage-height telemeters at station.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 116,500 acre-ft Apr. 7, 1977, elevation, 1,430.80 ft; minimum (after initial filling for regular operation), 11,800 acre-ft Apr. 1, 1965, elevation, 1,313.42 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 69,300 acre-ft May 17, elevation, 1,397.95 ft; minimum, 46,100 acre-ft Nov. 16, elevation, 1,375.00 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1396.20	67300	
Oct. 31	1382.42	52800	-14500
Nov. 30	1380.74	51200	-1600
Dec. 31	1380.54	51100	-100
CAL YR 1982			+23400
Jan. 31	1380.22	50800	-300
Feb. 28	1380.41	50900	+100
Mar. 31	1383.20	53600	+2700
Apr. 30	1396.28	67400	+13800
May 31	1396.47	67600	+200
June 30	1396.51	67700	+100
July 31	1395.52	66500	-1200
Aug. 31	1393.41	64200	-2300
Sept. 30	1391.24	61800	-2400
WTR YR 1983			-5500

03209000 POUND RIVER BELOW FLANNAGAN DAM, NEAR HAYSI, VA

LOCATION.--Lat 37°14'13", long 82°20'36", Dickenson County, Hydrologic Unit 05070202, on right bank 1,100 ft upstream from Blacklog Branch, 1,700 ft downstream from John W. Flannagan Dam, 1.4 mi upstream from mouth, and 3.4 mi northwest of Haysi.

DRAINAGE AREA.--221 mi^2.

PERIOD OF RECORD.--July 1926 to current year. Monthly discharge only for some periods, published in WSP 1305. Prior to October 1963, published as Pound River near Haysi.

REVISED RECORDS.--WSP 953: 1940-41. WSP 1003: 1942, 1943(P). WSP 1275: 1927-30, 1931(M), 1932-39.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Dec. 20, 1939, nonrecording gage at site 3.8 mi upstream at different datum. Dec. 20, 1939, to Sept. 30, 1963, water-stage recorder at site 4.6 mi upstream at datum 79.91 ft higher.

REMARKS.--Records fair. Flow regulated since March 1965 by John W. Flannagan Reservoir (station 03208990) 1,700 ft upstream and since August 1966 by North Fork Pound River Lake (station 03208680) 33 mi upstream. Corps of Engineers satellite telemeter at station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--57 years, 277 ft^3/s, 17.02 in/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 30,000 ft^3/s Mar. 23, 1929, gage height, 16.5 ft, from floodmarks, site and datum then in use; minimum, less than 0.1 ft^3/s on several days in September 1932. Maximum discharge since construction of John W. Flannagan Dam in 1965, 4,540 ft^3/s Apr. 8, 1977, gage height, 8.20 ft; minimum, 1.2 ft^3/s Feb. 16, 1968, gage height, 1.42 ft ; minimum daily, 2.3 ft^3/s June 26-29, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,240 ft^3/s May 17, gage height, 6.04 ft; minimum, 5.2 ft^3/s Feb. 24, gage height, 1.68 ft; minimum daily, 47 ft^3/s Aug. 13-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	264	856	247	148	319	49	294	190	56	76	52
2	302	286	1140	210	456	319	49	258	127	56	75	52
3	300	297	960	194	1300	319	49	430	104	57	78	52
4	300	696	560	183	1050	269	49	1330	405	58	83	52
5	297	1020	378	164	671	200	49	913	432	193	83	52
6	293	1010	327	164	446	200	49	472	231	202	83	52
7	293	643	300	164	304	200	49	376	231	87	83	52
8	293	400	241	164	370	200	49	499	231	60	83	52
9	293	376	212	164	446	161	49	458	186	54	83	52
10	335	404	212	164	376	173	49	318	111	55	83	52
11	359	404	212	164	631	218	49	380	111	56	83	52
12	359	404	212	164	822	218	50	352	113	57	58	52
13	444	404	215	140	819	218	49	612	113	57	47	52
14	477	404	186	197	404	215	49	976	113	57	47	52
15	477	312	179	218	408	218	51	681	82	67	47	53
16	477	131	793	218	652	279	51	1290	67	79	60	52
17	481	52	1040	180	623	299	51	1860	69	75	69	52
18	472	52	854	140	543	278	51	1470	69	63	69	52
19	472	52	459	113	360	226	52	773	137	53	81	52
20	363	52	459	87	312	140	52	331	147	54	96	52
21	327	52	459	138	312	140	52	436	108	54	96	53
22	327	52	371	282	312	130	52	843	109	54	115	54
23	327	106	335	586	312	49	141	1190	108	53	131	54
24	327	680	335	658	221	49	1070	988	66	52	131	54
25	327	447	255	586	369	49	1790	609	51	62	131	53
26	300	380	304	437	384	49	1340	400	52	77	131	54
27	268	380	408	367	315	49	712	300	53	77	131	54
28	268	380	457	335	250	49	689	254	54	77	131	54
29	268	702	495	308	---	49	448	228	56	77	85	54
30	268	759	419	241	---	49	316	228	56	76	52	54
31	264	---	288	158	---	49	---	228	---	75	52	---
TOTAL	10576	11601	13921	7535	13616	5380	7605	19777	3982	2230	2653	1579
MEAN	341	387	449	243	486	174	254	638	133	71.9	85.6	52.6
MAX	481	1020	1140	658	1300	319	1790	1860	432	202	131	54
MIN	218	52	179	87	148	49	49	228	51	52	47	52
(*)	-246	-34	-4	-6	+4	+44	+252	+4	-1	-22	-39	-43
MEAN‡	95.2	353	445	237	490	218	506	642	132	49.9	46.6	9.63
CFSM‡	.43	1.60	2.01	1.07	2.22	.99	2.29	2.90	.60	.23	.21	.04
IN‡	.50	1.78	2.32	1.24	2.31	1.14	2.55	3.35	.67	.26	.24	.05

CAL YR 1982 TOTAL 106327 MEAN 291 MAX 2710 MIN 31 MEAN‡ 323 CFSM‡ 1.46 IN‡ 19.86
WTR YR 1983 TOTAL 100455 MEAN 275 MAX 1860 MIN 47 MEAN‡ 266 CFSM‡ 1.20 IN‡ 16.36

* Change in contents, equivalent in cubic feet per second, in North Fork Pound River Lake and John W. Flannagan Reservoirs; furnished by Corps of Engineers.
‡ Adjusted for change in contents.

03471500 SOUTH FORK HOLSTON RIVER AT RIVERSIDE, NEAR CHILHOWIE, VA

LOCATION.--Lat 36°45'37", long 81°37'53", Smyth County, Hydrologic Unit 06010102, on right bank 400 ft upstream from highway bridge at Riverside, 900 ft upstream from Spring Branch, 3.2 mi downstream from Redstone Branch, 4.0 mi southeast of Chilhowie, and at mile 97.2.

DRAINAGE AREA.--76.1 mi^2.

PERIOD OF RECORD.--October 1920 to December 1931, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1306. Prior to October 1924, published as "near Chilhowie." June 1907 to December 1909, at site 4.5 mi downstream also published as "near Chilhowie"; records not equivalent.

REVISED RECORDS.--WSP 1033: 1943-44(m). WSP 1306: Drainage area, 1921-31(M).

GAGE.--Water-stage recorder. Datum of gage is 2,106.77 ft National Geodetic Vertical Datum of 1929. Nov. 1, 1920, to Nov. 14, 1931, nonrecording gage at site 400 ft downstream at same datum.

REMARKS.--Records good. Prior to August 1951, diurnal fluctuation at low flow caused by mill 500 ft above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 112 ft^3/s, 19.99 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,600 ft^3/s Nov. 6, 1977, gage height, 10.20 ft, from rating curve extended above 3,700 ft^3/s on basis of slope-area measurement of peak flow; minimum recorded, 2 ft^3/s Aug. 26, Oct. 15, 1943, Aug. 9, 11, 1944, Oct. 19, 1945, but may have been less in 1925 and 1926 before installation of water-stage recorder; minimum daily, 8 ft^3/s July 19, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 650 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0830	1350	4.66	Mar. 19	0630	918	3.91
Feb. 2	1600	*1730	5.17	Mar. 21	1230	1170	4.35
Mar. 6	2200	724	3.53	Apr. 24	1200	681	3.44

Minimum discharge, 25 ft^3/s Sept. 29, 30, gage height, 1.20 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	49	351	99	131	147	160	141	95	50	37	32
2	29	47	373	95	899	133	193	131	88	48	36	31
3	28	46	281	97	789	121	331	130	84	55	36	31
4	28	88	211	86	423	114	278	130	258	83	37	31
5	29	166	171	82	285	110	238	117	249	68	37	31
6	29	133	149	80	227	317	213	108	186	61	38	30
7	28	105	127	78	184	528	213	101	153	54	35	29
8	30	88	113	76	152	348	217	104	130	51	34	29
9	36	77	103	78	131	282	246	99	112	49	33	28
10	76	70	96	81	124	252	432	93	98	47	32	28
11	48	65	94	117	120	224	447	88	89	46	34	27
12	42	66	103	133	108	199	369	86	83	44	53	31
13	52	85	85	119	99	185	302	94	79	44	38	36
14	68	85	81	108	96	179	252	96	75	43	35	44
15	63	83	89	105	94	177	221	92	81	43	33	35
16	56	77	939	95	105	168	189	207	73	41	32	32
17	50	72	552	88	157	166	170	318	71	40	32	31
18	46	71	341	75	178	612	165	221	78	40	31	30
19	42	68	251	55	161	846	151	174	86	39	31	29
20	40	65	200	71	142	577	138	151	115	40	30	28
21	43	64	163	73	134	960	139	201	86	38	29	30
22	40	69	135	75	136	731	140	300	75	38	29	30
23	38	71	125	84	167	458	159	296	70	38	30	29
24	37	135	129	91	194	345	579	265	64	49	30	29
25	52	200	137	87	216	270	494	216	61	56	39	28
26	78	162	137	84	198	214	362	177	58	47	33	31
27	74	136	132	83	172	206	271	148	56	42	49	30
28	66	128	127	83	157	226	215	128	56	38	46	26
29	60	377	123	88	---	212	179	117	54	37	48	26
30	56	339	114	100	---	189	156	118	52	35	38	26
31	52	---	106	124	---	179	---	100	---	35	34	---
TOTAL	1445	3287	6138	2790	5979	9675	7619	4747	2915	1439	1109	908
MEAN	46.6	110	198	90.0	214	312	254	153	97.2	46.4	35.8	30.3
MAX	78	377	939	133	899	960	579	318	258	83	53	44
MIN	28	46	81	55	94	110	138	86	52	35	29	26
CFSM	.61	1.45	2.60	1.18	2.81	4.10	3.34	2.01	1.28	.61	.47	.40
IN.	.71	1.61	3.00	1.36	2.92	4.73	3.72	2.32	1.42	.70	.54	.44

CAL YR 1982 TOTAL 46708 MEAN 128 MAX 1350 MIN 28 CFSM 1.68 IN 22.83
WTR YR 1983 TOTAL 48051 MEAN 132 MAX 960 MIN 26 CFSM 1.74 IN 23.49

03473000 SOUTH FORK HOLSTON RIVER NEAR DAMASCUS, VA

LOCATION.--Lat 36°39'06", long 81°50'39", Washington County, Hydrologic Unit 06010102, on right bank 500 ft upstream from bridge on U.S. Highway 58, 0.7 mi downstream from Laurel Creek, 3.2 mi northwest of Damascus, 4.9 mi upstream from Middle Fork, and at mile 77.2.

DRAINAGE AREA.--301 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1306. Published as "at Vestal" prior to October 1978.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1932-33(M).

GAGE.--Water-stage recorder. Datum of gage is 1,792.30 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some diurnal fluctuation caused by powerplant above station. Tennessee Valley Authority gage-height radio transmitter at station, receiver and recorder at Kingsport, TN.

AVERAGE DISCHARGE.--52 years, 480 ft³/s, 21.66 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s Apr. 5, 1977, gage height, 17.11 ft, from rating curve extended above 10,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 30 ft³/s Oct. 14, 1941, Dec. 24, 1943, gage height, 2.16 ft; minimum daily, 60 ft³/s Sept. 18, 1954, Sept. 26, 27, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Dec. 16	1230	*3860	8.01	Mar. 21	1630	3430	7.60

Minimum discharge, 95 ft³/s Sept. 12, 30, gage height, 2.40 ft; minimum daily, 97 ft³/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	240	1640	480	423	608	573	586	409	288	158	139
2	160	231	1690	460	1320	558	597	534	381	233	176	134
3	155	229	1220	450	1860	509	784	536	352	217	150	130
4	150	472	932	420	1200	475	745	584	999	239	146	127
5	155	663	765	400	879	460	748	492	1020	401	190	125
6	160	565	658	350	761	607	817	451	796	343	191	116
7	160	460	549	320	657	993	894	422	668	253	154	115
8	150	390	474	325	554	796	954	451	571	225	143	114
9	197	344	431	344	486	728	1080	421	482	212	138	110
10	260	311	402	380	484	687	1960	389	422	200	131	107
11	240	287	399	568	501	661	1680	370	381	195	130	100
12	214	309	475	623	448	617	1300	360	349	186	271	194
13	288	475	383	555	419	606	1060	394	324	180	173	296
14	375	427	359	500	423	620	898	421	305	175	145	305
15	330	411	415	494	424	659	875	380	314	187	136	172
16	286	374	2950	443	459	651	759	1480	377	172	132	140
17	252	347	1980	410	599	641	694	1810	426	170	128	138
18	231	348	1270	368	685	2180	685	1130	418	165	123	129
19	216	326	1000	270	652	2710	631	871	398	163	118	117
20	206	303	850	332	582	2050	585	753	391	161	113	111
21	244	294	760	347	543	2850	596	949	412	158	109	127
22	218	320	700	459	538	2420	590	1230	333	155	125	167
23	203	325	620	510	639	1550	651	1260	303	149	149	125
24	197	752	600	515	719	1170	1570	1130	276	186	213	116
25	297	956	700	468	828	942	2060	925	259	297	215	110
26	385	761	800	424	774	775	1440	775	247	241	142	108
27	361	634	750	401	695	747	1080	655	234	183	354	109
28	328	605	650	381	640	739	875	563	250	164	411	104
29	299	1560	600	368	---	671	744	513	247	152	241	100
30	276	1380	550	383	---	621	654	550	270	145	187	97
31	254	---	500	413	---	620	---	444	---	140	155	---
TOTAL	7407	15099	26072	13161	19192	30921	28579	21829	12614	6335	5347	4082
MEAN	239	503	841	425	685	997	953	704	420	204	172	136
MAX	385	1560	2950	623	1860	2850	2060	1810	1020	401	411	305
MIN	150	229	359	270	419	460	573	360	234	140	109	97
CFSM	.79	1.67	2.79	1.41	2.28	3.31	3.17	2.34	1.40	.68	.57	.45
IN.	.92	1.87	3.22	1.63	2.37	3.82	3.53	2.70	1.56	.78	.66	.50

CAL YR 1982 TOTAL 207142 MEAN 568 MAX 4240 MIN 150 CFSM 1.89 IN 25.60
WTR YR 1983 TOTAL 190638 MEAN 522 MAX 2950 MIN 97 CFSM 1.73 IN 23.56

03473000 SOUTH FORK HOLSTON RIVER NEAR DAMASCUS, VA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1952, 1968 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1949 to September 1950, October 1967 to September 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 08...	0830	147	195	7.9	17.5	17	8.1	84	7	21	7.6	6.5
NOV 19...	0915	325	115	7.7	9.0	5	10.8	47	0	12	4.1	2.9
JAN 07...	0900	336	124	7.2	4.5	3	12.6	62	3	16	5.4	1.6
FEB 18...	0955	690	110	7.8	5.0	8	11.1	44	2	11	4.0	2.7
APR 08...	1020	948	91	7.5	11.0	7	10.0	37	3	9.2	3.3	3.3
MAY 13...	0935	376	145	7.9	15.0	2	9.4	66	5	17	5.7	3.9
JUN 27...	1000	236	187	7.5	21.0	25	8.4	77	5	20	6.6	4.0
AUG 25...	1305	210	155	7.9	22.0	3	7.8	73	8	19	6.1	3.4

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 08...	6.2	77	15	7.9	<.10	6.2	120	118	.010	.31	.020	14
NOV 19...	1.0	47	5.0	2.5	<.10	5.3	54	61	<.010	.37	.020	18
JAN 07...	1.3	59	3.0	2.3	<.10	6.1	82	74	.020	.71	.020	5
FEB 18...	1.2	42	6.8	3.2	<.10	5.6	62	62	.010	.51	<.010	14
APR 08...	1.2	34	7.6	4.4	<.10	5.7	58	57	.010	.44	<.010	24
MAY 13...	1.3	61	6.7	2.6	<.10	4.4	78	78	<.010	.43	<.010	12
JUN 27...	4.4	72	8.6	5.9	.10	5.6	102	99	<.010	.56	.020	22
AUG 25...	2.0	65	10	3.2	.10	6.5	93	89	<.010	.57	.020	33

< Actual value is known to be less than the value shown.

03475000 MIDDLE FORK HOLSTON RIVER NEAR MEADOWVIEW, VA

LOCATION.--Lat 36°42'47", long 81°49'08", Washington County, Hydrologic Unit 06010102, on left bank 48 ft downstream from bridge on State Highway 803, 0.9 mi upstream from Cedar Creek, 4.1 mi southeast of Meadowview, and at mile 13.2.

DRAINAGE AREA.--211 mi^2.

PERIOD OF RECORD.--October 1931 to September 1953, May 1976 to current year. Monthly discharge only for October 1931, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1276: 1932-34.

GAGE.--Water-stage recorder. Datum of gage is 1,820.22 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Prior to 1954, flow regulated by powerplant 0.9 mi above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--29 years, 242 ft^3/s, 15.58 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft^3/s Nov. 7, 1977, gage height, 13.41 ft; minimum, 6 ft^3/s Nov. 10, 1933, Dec. 4, 1936, Jan. 21, 22, Feb. 1, 1940, Jan. 8, 1942, Oct. 15, 16, 31, 1943; minimum daily, 7 ft^3/s Nov. 19, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 29, 1957, reached a stage of 11.8 ft, from floodmark, discharge, 10,000 ft^3/s, and flood of Dec. 10, 1972, reached a stage of 11.0 ft, from floodmark, discharge, 8,540 ft^3/s, from information by Tennessee Valley Authority. Flood of Mar. 30, 1975, reached a stage of 10.37 ft, discharge, 7,410 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 29	1400	2030	5.68	Dec. 16	1600	*2500	6.30

Minimum discharge, 63 ft^3/s Sept. 29, 30; minimum gage height, 1.95 ft Sept. 10-12, 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	102	794	227	227	296	266	295	226	129	91	94
2	86	100	899	221	425	274	260	275	213	123	98	88
3	84	100	599	227	842	248	303	271	199	118	87	88
4	82	143	457	226	498	249	300	311	1080	118	100	88
5	86	273	379	223	362	239	295	280	894	145	107	87
6	93	215	327	218	324	242	316	260	501	132	106	86
7	84	172	281	215	294	377	321	244	381	118	93	84
8	91	149	248	210	261	345	347	246	318	112	87	82
9	95	135	229	213	236	320	389	238	273	107	83	79
10	242	130	215	223	238	301	1430	216	243	106	79	77
11	163	125	214	296	253	299	948	206	223	104	83	76
12	127	133	248	329	239	294	664	200	207	100	151	107
13	199	200	227	296	230	292	524	212	195	98	107	197
14	280	175	211	270	234	290	443	217	185	97	95	151
15	196	160	221	261	247	280	435	202	184	96	89	103
16	157	146	1570	245	309	262	378	683	180	94	88	88
17	135	141	1140	230	431	248	338	1020	175	95	87	84
18	122	141	648	200	461	590	336	491	177	93	86	79
19	115	138	494	150	404	1200	333	367	185	92	84	75
20	112	133	433	170	345	873	317	351	194	91	81	73
21	110	133	372	197	311	1140	335	430	172	89	80	84
22	107	173	322	199	297	1100	329	693	161	86	82	95
23	102	294	308	206	312	662	340	649	150	88	86	82
24	100	337	321	214	315	501	886	581	143	108	83	75
25	120	401	343	189	400	420	903	463	137	128	149	73
26	155	300	337	179	395	351	625	375	133	110	105	69
27	138	253	315	178	342	327	483	314	127	97	137	69
28	125	255	292	181	313	325	406	273	130	91	217	67
29	115	1380	279	188	---	291	356	254	136	87	170	65
30	110	817	257	202	---	268	320	284	134	84	120	67
31	105	---	239	220	---	272	---	248	---	82	101	---
TOTAL	3922	7354	13219	6803	9545	13176	13926	11149	7656	3218	3212	2632
MEAN	127	245	426	219	341	425	464	360	255	104	104	87.7
MAX	280	1380	1570	329	842	1200	1430	1020	1080	145	217	197
MIN	82	100	211	150	227	239	260	200	127	82	79	65
CFSM	.60	1.16	2.02	1.04	1.62	2.01	2.20	1.71	1.21	.49	.49	.42
IN.	.69	1.30	2.33	1.20	1.68	2.32	2.46	1.97	1.35	.57	.57	.46

CAL YR 1982 TOTAL 113959 MEAN 312 MAX 2560 MIN 82 CFSM 1.48 IN 20.09
WTR YR 1983 TOTAL 95812 MEAN 262 MAX 1570 MIN 65 CFSM 1.24 IN 16.89

03478400 BEAVER CREEK AT BRISTOL, VA

LOCATION.--Lat 36°37'54", long 82°08'02", Bristol City, Hydrologic Unit 06010102, on right bank 50 ft upstream from bridge on State Highway 1405, 75 ft downstream from Goose Creek, 0.9 mi downstream from Clear Creek, 3.7 mi northeast of Bristol, VA post office, and at mile 20.6.

DRAINAGE AREA.--27.7 mi^2.

PERIOD OF RECORD.--July 1957 to current year. Published as "near Bristol" prior to October 1974.

GAGE.--Water-stage recorder. Datum of gage is 1,780.98 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Small diurnal fluctuation at low flow caused by withdrawal of water, which is returned to stream 600 ft above station, for car-washing operation. Since September 1965, some regulation at high flow by flood-control reservoirs, capacity, 7,600 acre-ft. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--26 years, 35.9 ft^3/s, 17.60 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft^3/s Oct. 2, 1977, gage height, 9.94 ft, from rating curve extended above 390 ft^3/s on basis of slope-area measurement of peak flow; minimum, 3.4 ft^3/s Dec. 30, 1963; minimum daily, 7.4 ft^3/s Sept. 28, 29, Oct. 5, 15, 18, 19, 23, 24, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1936 reached a stage of about 12 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 212 ft^3/s Nov. 28, gage height, 4.85 ft; minimum daily, 14 ft^3/s Sept. 25, 26, 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	21	100	43	30	33	33	54	51	35	31	18
2	31	21	76	44	36	32	33	50	49	34	25	18
3	30	22	67	44	35	31	32	44	49	33	24	18
4	30	27	61	42	33	31	31	38	122	34	24	18
5	30	23	59	40	31	31	36	42	71	48	24	17
6	30	22	55	41	33	31	36	39	61	36	22	17
7	29	21	51	41	33	31	35	37	58	33	22	17
8	33	21	49	40	32	31	33	35	55	33	21	16
9	33	20	47	49	33	30	62	33	52	33	21	16
10	31	20	46	43	39	29	86	32	51	32	21	16
11	30	20	47	43	46	30	57	42	48	32	25	16
12	30	27	52	39	43	29	49	40	47	31	30	18
13	49	27	47	38	42	28	46	62	46	30	22	19
14	35	23	44	37	42	27	44	54	46	31	20	18
15	30	22	49	36	42	27	53	48	45	30	20	16
16	28	21	136	35	42	26	46	101	44	29	19	16
17	26	21	86	35	40	25	44	72	62	30	18	16
18	25	22	72	34	37	26	46	60	44	32	18	15
19	25	22	68	33	36	26	46	58	49	29	18	15
20	24	21	65	32	35	26	46	55	50	31	18	15
21	24	21	60	33	34	52	45	94	41	29	17	17
22	23	28	57	37	34	40	43	88	40	26	17	16
23	23	27	56	36	36	38	90	91	38	25	19	16
24	22	34	53	35	37	36	127	77	38	27	17	15
25	26	29	51	34	37	35	90	68	38	31	17	14
26	23	28	51	33	35	34	75	63	37	26	15	14
27	22	28	49	32	34	37	66	59	37	24	22	15
28	22	41	48	32	33	35	58	57	38	23	27	15
29	21	134	47	31	---	33	52	56	36	23	21	14
30	21	71	45	31	---	33	45	60	36	23	20	14
31	21	---	44	31	---	34	---	52	---	22	19	---
TOTAL	859	885	1838	1154	1020	987	1585	1761	1479	935	654	485
MEAN	27.7	29.5	59.3	37.2	36.4	31.8	52.8	56.8	49.3	30.2	21.1	16.2
MAX	49	134	136	49	46	52	127	101	122	48	31	19
MIN	21	20	44	31	30	25	31	32	36	22	15	14
CFSM	1.00	1.07	2.14	1.34	1.31	1.15	1.91	2.05	1.78	1.09	.76	.59
IN.	1.15	1.19	2.47	1.55	1.37	1.33	2.13	2.36	1.99	1.26	.88	.65

CAL YR 1982 TOTAL 18862 MEAN 51.7 MAX 244 MIN 19 CFSM 1.87 IN 25.33
WTR YR 1983 TOTAL 13642 MEAN 37.4 MAX 136 MIN 14 CFSM 1.35 IN 18.32

03488000 NORTH FORK HOLSTON RIVER NEAR SALTVILLE, VA

LOCATION.--Lat 36°53'48", long 81°44'47", Smyth County, Hydrologic Unit 06010101, on right bank 0.5 mi upstream from Cedar Branch bridge, 1.5 mi northeast of Saltville, 7.8 mi downstream from Laurel Creek, and at mile 85.0.

DRAINAGE AREA.--222 mi^2.

PERIOD OF RECORD.--June 1907 to December 1908 (published as "at Saltville"), October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 758: Drainage area. WSP 1113: 1944-47. WSP 1306: 1907(M), 1921-22(M), 1924-30(M), 1932-34(M), drainage area at site used 1907-8. WSP 1726: 1947, monthly and yearly runoff.

GAGE.--Water-stage recorder. Datum of gage is 1,703.53 ft National Geodetic Vertical Datum of 1929. June 11, 1907, to Nov. 12, 1908, nonrecording gage on highway bridge 2.1 mi downstream at different datum. Nov. 2, 1920, to May 23, 1934, nonrecording gage on highway bridge 0.5 mi downstream at datum 7.74 ft lower.

REMARKS.--Records good. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--64 years, 302 ft^3/s, 18.47 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft^3/s Jan. 29, 1957, gage height, 13.20 ft; maximum gage height, 13.57 ft Nov. 6, 1977; minimum discharge, 1.0 ft^3/s Oct. 15, 16, 1947, gage height, 0.13 ft, flow retarded by mine cave-in; minimum daily, 2.0 ft^3/s Oct. 15, 1947.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 29	1300	*3070	5.44	Dec. 16	1530	3010	5.38

Minimum discharge, 33 ft^3/s Aug. 21, 22, Sept. 30, gage height, 0.47 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	67	1020	253	280	382	287	328	221	116	46	62
2	47	66	1090	236	404	350	281	296	203	89	57	54
3	46	80	741	229	852	315	343	286	186	80	56	50
4	45	150	549	206	607	286	351	363	789	75	54	49
5	57	350	441	187	445	269	357	337	715	82	67	47
6	52	190	391	179	395	263	434	309	479	87	64	45
7	51	140	322	174	349	389	443	281	376	75	65	43
8	51	120	276	167	301	384	437	273	312	68	51	42
9	64	110	249	168	260	367	463	260	261	64	47	40
10	155	100	230	181	262	339	1760	230	224	61	42	38
11	137	105	227	277	274	325	1180	212	197	59	42	36
12	102	190	262	313	255	311	779	203	177	57	58	41
13	174	210	228	280	238	302	592	208	161	55	57	154
14	304	180	205	251	257	309	483	216	148	54	49	66
15	208	150	232	249	285	322	476	199	142	52	42	52
16	145	140	1980	229	388	314	432	440	149	51	40	45
17	112	130	1350	204	607	289	389	947	151	49	39	42
18	94	125	770	150	665	414	374	569	154	49	38	39
19	84	120	568	120	564	1250	358	434	162	48	37	37
20	78	115	475	140	468	986	326	423	143	48	36	36
21	78	120	398	173	417	1640	324	421	162	49	35	50
22	76	130	333	183	401	1500	319	506	141	47	36	69
23	73	144	321	196	449	866	355	590	119	49	56	55
24	68	434	391	214	481	632	1410	564	107	56	42	46
25	73	545	466	208	577	504	1540	461	99	66	78	40
26	85	427	462	197	535	406	968	385	92	73	76	38
27	94	343	418	198	454	367	663	325	87	57	317	37
28	79	342	375	204	411	361	513	279	84	50	263	36
29	74	2170	347	211	---	317	426	261	87	45	158	35
30	72	1190	308	240	---	284	369	296	101	43	116	34
31	69	---	274	271	---	288	---	258	---	42	78	---
TOTAL	2896	8683	15699	6488	11881	15331	17432	11160	6429	1896	2242	1458
MEAN	93.4	289	506	209	424	495	581	360	214	61.2	72.3	48.6
MAX	304	2170	1980	313	852	1640	1760	947	789	116	317	154
MIN	45	66	205	120	238	263	281	199	84	42	35	34
CFSM	.42	1.30	2.28	.94	1.91	2.23	2.62	1.62	.96	.28	.33	.22
IN.	.49	1.45	2.63	1.09	1.99	2.57	2.92	1.87	1.08	.32	.38	.24

CAL YR 1982 TOTAL 132618 MEAN 363 MAX 4000 MIN 45 CFSM 1.64 IN 22.22
WTR YR 1983 TOTAL 101595 MEAN 278 MAX 2170 MIN 34 CFSM 1.25 IN 17.02

03521500 CLINCH RIVER AT RICHLANDS, VA

LOCATION.--Lat 37°05'10", long 81°46'52", Tazewell County, Hydrologic Unit 06010205, on right bank 1.0 mi southeast of Richlands, 1.6 mi downstream from Middle Creek, 2.2 mi upstream from Big Creek, and at mile 321.0.

DRAINAGE AREA.--137 mi².

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 1306: 1946(M), 1948-50(M).

GAGE.--Water-stage recorder. Datum of gage is 1,924.08 ft National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1950, nonrecording gage at bridge 1.1 mi downstream at datum 6.53 ft lower.

REMARKS.--Records good except those for period of no gage-height record, Feb. 16 to Apr. 4, which are fair. Prior to October 1970, diurnal fluctuation at low flow caused by mill 1.7 mi above station. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--38 years, 193 ft³/s, 19.13 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s Jan. 29, 1957, gage height, 19.3 ft, from floodmark, from rating curve extended above 4,900 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 3.2 ft³/s Sept. 8, 1955; minimum daily, 8.8 ft³/s July 6, Sept. 10, 16, 1964; minimum gage height, 0.45 ft July 2, 3, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 22, 1901, reached a stage of 21.3 ft, present site and datum, from floodmark, discharge, 11,500 ft³/s, from report by Tennessee Valley Authority. Flood of Feb. 18, 1944, reached a stage of 13.7 ft, present site and datum, from floodmark, discharge, 5,500 ft³/s, from report by Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,070 ft³/s at 1230 hours Dec. 16, gage height, 6.84 ft, no other peak above base of 1,600 ft³/s; minimum daily, 19 ft³/s Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	29	478	153	153	240	170	204	99	59	29	41
2	24	31	536	137	242	230	180	183	91	52	32	34
3	23	31	332	129	383	200	200	183	89	328	32	32
4	23	114	240	114	292	180	230	229	269	171	30	31
5	29	168	201	103	230	170	257	198	223	132	40	29
6	44	100	197	98	214	160	321	177	162	110	42	28
7	33	78	154	95	205	150	301	159	159	83	40	26
8	28	66	130	90	179	160	275	177	139	68	32	25
9	42	58	117	91	165	150	330	173	116	60	29	24
10	85	53	106	102	177	140	1180	155	99	56	27	23
11	65	49	106	109	232	145	720	142	88	53	30	22
12	48	57	129	106	212	150	487	143	81	49	51	24
13	99	93	114	97	200	155	361	198	74	46	48	26
14	135	86	115	94	227	160	288	162	86	44	34	25
15	89	74	182	100	231	180	456	139	97	43	30	24
16	67	66	1620	96	280	170	528	298	88	41	29	23
17	55	61	834	93	330	160	383	385	104	39	28	22
18	47	61	447	80	350	150	318	253	119	38	28	21
19	42	60	312	60	300	250	278	204	122	37	27	21
20	40	58	263	75	250	350	239	181	159	37	25	20
21	47	57	222	92	220	500	211	186	101	36	24	30
22	46	103	186	154	210	650	190	239	80	35	23	44
23	40	208	201	262	240	450	263	293	70	38	23	34
24	36	255	368	300	270	350	1150	300	62	42	23	26
25	39	236	324	246	350	280	1130	229	57	55	43	23
26	41	176	304	200	320	240	707	186	53	45	33	23
27	39	151	320	174	280	210	466	152	50	38	280	21
28	36	171	285	160	260	220	342	131	53	34	183	21
29	35	688	245	149	---	190	272	127	67	31	114	20
30	34	433	201	149	---	170	235	129	70	29	62	19
31	33	---	172	166	---	160	---	111	---	28	47	---
TOTAL	1468	3871	9441	4074	7002	7070	12468	6026	3127	1957	1518	782
MEAN	47.4	129	305	131	250	228	416	194	104	63.1	49.0	26.1
MAX	135	688	1620	300	383	650	1180	385	269	328	280	44
MIN	23	29	106	60	153	140	170	111	50	28	23	19
CFSM	.35	.94	2.23	.96	1.83	1.66	3.04	1.42	.76	.46	.36	.19
IN.	.40	1.05	2.56	1.11	1.90	1.92	3.39	1.64	.85	.53	.41	.21

CAL YR 1982 TOTAL 73014 MEAN 200 MAX 2300 MIN 23 CFSM 1.46 IN 19.83
WTR YR 1983 TOTAL 58804 MEAN 161 MAX 1620 MIN 19 CFSM 1.18 IN 15.97

03524000 CLINCH RIVER AT CLEVELAND, VA

LOCATION.--Lat 36°56'41", long 82°09'18", Russell County, Hydrologic Unit 06010205, on right bank 500 ft upstream from highway bridge at Cleveland, 0.5 mi downstream from Muddy Hollow, 2.3 mi downstream from Weaver Creek, 4.4 mi downstream from Thompson Creek, and at mile 271.6.

DRAINAGE AREA.--528 mi^2.

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1921-23(M), 1926(M), 1929-31(M). WSP 1706: 1927(M).

GAGE.--Water-stage recorder. Datum of gage is 1,500.24 ft National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1931, nonrecording gage on highway bridge 500 ft downstream at datum 1.0 ft lower.

REMARKS.--Records good. Tennessee Valley Authority gage-height Automatic Data Acquisition System at station, called at 6-hour intervals by computer at Knoxville, TN. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--63 years, 713 ft^3/s, 18.34 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,500 ft^3/s Apr. 5, 1977, gage height, 26.40 ft; minimum, 35 ft^3/s Sept. 28, 1964; minimum gage height, 0.96 ft Feb. 10, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,060 ft^3/s at 1900 hours Dec. 16, gage height, 8.64 ft, no other peak above base of 5,000 ft^3/s; minimum, 75 ft^3/s Sept. 30, gage height, 1.33 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	164	2110	607	606	957	637	908	484	284	102	159
2	143	158	2330	554	959	891	632	798	437	238	105	134
3	138	158	1660	524	1730	797	843	766	404	206	113	120
4	133	231	1220	478	1440	714	831	990	1970	526	130	112
5	143	499	968	432	1100	655	824	919	1430	406	235	109
6	145	503	927	408	970	610	1070	793	937	377	245	106
7	151	369	797	396	990	592	1070	710	765	298	173	101
8	156	305	660	378	920	605	1010	781	673	236	138	96
9	153	267	577	382	826	578	944	837	568	200	121	90
10	443	240	519	467	804	558	2890	734	490	181	107	87
11	414	225	498	520	1100	562	2670	659	433	168	112	85
12	305	218	588	540	1100	564	1900	599	391	159	299	83
13	562	312	586	493	988	563	1480	615	357	150	224	95
14	991	365	540	454	1040	604	1200	652	331	144	162	100
15	679	338	694	450	1090	655	1560	570	326	139	129	95
16	464	299	3850	447	1070	653	2020	968	405	131	114	88
17	354	272	3740	417	1200	615	1590	1630	392	128	106	87
18	287	263	2030	330	1340	592	1330	1230	387	127	101	83
19	253	259	1460	250	1230	823	1200	950	401	128	100	80
20	231	249	1220	389	1020	1220	1040	834	559	126	96	78
21	234	244	1030	422	874	1870	951	794	526	120	91	91
22	231	315	866	707	802	2460	857	1100	379	117	86	123
23	212	627	792	1100	861	1810	909	1430	312	116	83	132
24	197	1130	932	1140	1010	1370	3720	1630	271	142	92	112
25	189	1130	1070	1040	1280	1120	4220	1220	242	187	96	97
26	186	862	995	853	1250	927	2940	960	222	175	96	87
27	186	713	1000	731	1090	827	2000	789	205	156	117	83
28	186	714	959	657	1010	849	1520	664	220	128	806	81
29	177	2450	884	610	---	745	1230	605	231	115	569	77
30	172	2270	769	592	---	658	1050	621	253	108	364	76
31	166	---	672	605	---	640	---	551	---	104	217	---
TOTAL	8429	16149	36943	17373	29700	27084	46138	27307	15001	5820	5529	2947
MEAN	272	538	1192	560	1061	874	1538	881	500	188	178	98.2
MAX	991	2450	3850	1140	1730	2460	4220	1630	1970	526	806	159
MIN	133	158	498	250	606	558	632	551	205	104	83	76
CFSM	.52	1.02	2.26	1.06	2.01	1.66	2.91	1.67	.95	.36	.34	.19
IN.	.59	1.14	2.60	1.22	2.09	1.91	3.25	1.92	1.06	.41	.39	.21

CAL YR 1982 TOTAL 314693 MEAN 862 MAX 6010 MIN 133 CFSM 1.63 IN 22.17
WTR YR 1983 TOTAL 238420 MEAN 653 MAX 4220 MIN 76 CFSM 1.24 IN 16.80

03528000 CLINCH RIVER ABOVE TAZEWELL, TN

LOCATION.--Lat 36°25'30", long 83°23'54", Claiborne County, Hydrologic Unit 06010205, on right bank 0.4 mi upstream from Grissom Island, 4.6 mi downstream from Big War Creek, 10 mi east of Tazewell, and at mile 159.8.

DRAINAGE AREA.--1,474 mi².

PERIOD OF RECORD.--October 1918 to current year. Prior to April 1919 monthly discharge only, published in WSP 1306. Published as "near Lone Mountain" October 1918 to September 1927, as "near Tazewell" August 1927 to December 1936, and as "above Tazewell" July 1935 to current year. Gage-height record "near Tazewell" January 1937 to July 1941.

REVISED RECORDS.--WSP 803: Drainage area at site "near Tazewell." WSP 1306: Drainage area at site "near Lone Mountain." WSP 1336: 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,060.7 ft National Geodetic Vertical Datum of 1929. Apr. 1, 1919, to Sept. 30, 1927, nonrecording gage on railroad bridge 23.3 mi downstream at datum 102.7 ft lower. Aug. 8, 1927, to July 16, 1941, water-stage recorder at site 8.0 mi downstream at datum 47.2 ft lower. Water-stage recorder at present site and datum since July 29, 1935.

REMARKS.--Records good.

AVERAGE DISCHARGE.--65 years, 2,100 ft³/s, 19.35 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,100 ft³/s Apr. 5, 1977, gage height, 29.32 ft, from floodmarks; minimum, 108 ft³/s Sept. 11, 1925; minimum gage height at present site and datum, 0.33 ft Sept. 20, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1862 reached a stage of about 24 ft, present site and datum, from information by local resident, discharge, about 66,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,500 ft³/s at 1330 hours on Dec. 2 and 0400 hours on Apr. 25, gage height, 8.59 ft, no peak above base of 14,000 ft³/s; minimum, 229 ft³/s Sept. 29, 30, gage height, 0.71 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	442	373	7810	1990	1520	2320	1360	2640	1800	675	314	612
2	415	367	10700	1800	4280	2200	1360	2330	1540	586	309	466
3	391	410	7640	1690	8020	2050	1520	2290	1370	601	289	378
4	373	1230	4810	1540	6190	1880	1790	3600	3440	569	280	328
5	360	1990	3910	1400	4340	1730	2630	4330	6630	1000	316	297
6	349	1700	4350	1280	3390	1610	4730	3410	4350	1760	382	286
7	343	1440	3480	1200	3100	1510	3840	2730	2930	1200	510	278
8	368	1170	2770	1140	2970	1470	3290	3190	2430	837	607	269
9	401	933	2280	1350	2800	1440	2890	3590	2060	681	474	251
10	404	794	1950	2340	2740	1410	2920	3170	1740	582	395	239
11	587	704	1760	2420	4600	1340	4140	2670	1500	523	344	237
12	611	671	1880	2480	5160	1300	5030	2320	1320	480	390	234
13	1300	979	1890	2310	4430	1280	3940	2410	1170	449	970	236
14	1460	1090	1800	2050	3860	1260	3220	3810	1060	424	887	249
15	1500	1070	1770	1850	3660	1260	3430	3300	965	409	591	251
16	1460	1000	4040	1700	3550	1280	4900	2800	899	403	451	254
17	1070	907	8470	1560	3340	1310	5080	3770	855	402	386	246
18	826	869	7930	1440	3250	1280	4140	4570	909	414	337	237
19	687	1120	4900	1280	3260	1240	3730	3560	891	465	305	238
20	605	1020	3800	1050	3010	1240	3270	3000	870	412	286	233
21	566	913	3220	1040	2600	1790	2890	4260	895	482	271	240
22	542	1030	2730	1310	2300	2550	2620	7820	1060	393	258	259
23	524	1810	2420	2040	2180	3570	2900	9480	960	357	248	274
24	494	2400	2250	2790	2180	2980	8130	7490	796	336	247	323
25	465	3520	2200	2770	2320	2400	11100	6230	699	310	266	303
26	442	3070	2430	2530	2620	2050	9560	4350	638	451	412	289
27	426	2420	2630	2210	2700	1820	6690	3290	601	514	398	259
28	408	2170	2710	1950	2470	1700	4720	2650	622	446	368	242
29	398	4790	2740	1740	---	1630	3670	2250	606	388	446	231
30	394	7900	2500	1630	---	1540	3040	2030	607	347	972	229
31	384	---	2220	1600	---	1410	---	2040	---	314	760	---
TOTAL	18995	49860	115990	55480	96840	53850	122530	115380	46213	17210	13469	8468
MEAN	613	1662	3742	1790	3459	1737	4084	3722	1540	555	434	282
MAX	1500	7900	10700	2790	8020	3570	11100	9480	6630	1760	972	612
MIN	343	367	1760	1040	1520	1240	1360	2030	601	310	247	229
CFSM	.42	1.13	2.54	1.21	2.35	1.18	2.77	2.53	1.05	.38	.29	.19
IN.	.48	1.26	2.93	1.40	2.44	1.36	3.09	2.91	1.17	.43	.34	.21

CAL YR 1982 TOTAL 895107 MEAN 2452 MAX 18200 MIN 343 CFSM 1.66 IN 22.59
WTR YR 1983 TOTAL 714285 MEAN 1957 MAX 11100 MIN 229 CFSM 1.33 IN 18.03

03531500 POWELL RIVER NEAR JONESVILLE, VA

LOCATION.--Lat 36°39'43", long 83°05'42", Lee County, Hydrologic Unit 06010206, on right bank 175 ft downstream from highway bridge, 2 mi southeast of Jonesville, 10 mi upstream from Wallen Creek, and at mile 143.1.

DRAINAGE AREA.--319 mi^2.

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1033: 1932-44. WSP 1436: 1946(M), 1948(M).

GAGE.--Water-stage recorder. Datum of gage is 1,259.08 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Tennessee Valley Authority gage-height Automatic Data Acquisition System at station, called at 6-hour intervals by computer at Knoxville, TN. Several observations of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.

AVERAGE DISCHARGE.--52 years, 541 ft^3/s, 23.03 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft^3/s Apr. 5, 1977, gage height, 44.32 ft, from floodmark, from rating curve extended above 20,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 17 ft^3/s Sept. 19, 20, 1954, and as result of storage behind temporary dam Oct. 18, 1961; minimum gage height, 0.68 ft Oct. 18, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	2230	5130	10.34	May 23	0800	*5680	11.20

Minimum discharge, 48 ft^3/s Sept. 12, 13, gage height, 1.19 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	90	2670	589	329	468	318	565	465	163	72	74
2	130	90	3050	517	2260	465	315	496	413	148	70	75
3	123	105	1660	466	3400	437	491	650	373	151	80	72
4	118	1040	1140	408	1610	398	495	2480	1620	150	124	62
5	116	1100	1150	362	1090	363	575	1610	1420	720	160	63
6	112	613	2030	341	898	350	981	1130	883	612	170	60
7	109	412	1360	323	855	331	878	863	794	278	120	58
8	118	316	1010	303	725	336	751	1060	688	199	90	59
9	123	263	806	346	626	361	663	1220	546	171	80	55
10	123	227	661	474	620	327	785	988	465	152	75	53
11	141	204	589	495	1860	322	809	817	403	141	110	50
12	130	210	625	501	1570	317	756	681	357	133	250	49
13	244	539	534	452	1170	306	663	1020	317	129	150	62
14	358	436	461	414	987	304	580	1860	288	122	110	59
15	227	371	466	403	874	314	1290	1360	264	122	90	64
16	173	312	1480	376	803	313	1600	1500	244	114	80	57
17	148	277	1560	341	763	298	1180	1950	235	104	75	57
18	133	277	1110	280	735	292	937	1390	234	105	72	58
19	123	333	896	220	688	288	847	1070	224	126	69	59
20	121	341	896	254	604	272	672	930	215	138	69	53
21	130	324	776	306	528	378	571	1350	262	120	64	66
22	135	679	649	623	488	468	510	2500	217	99	82	143
23	116	1110	601	746	503	418	612	4750	189	92	76	122
24	109	1350	589	672	515	376	2380	2880	176	88	185	77
25	105	1180	567	570	557	348	2860	1770	171	99	178	62
26	103	867	801	489	540	312	1780	1290	163	156	153	58
27	99	686	1210	437	486	316	1260	984	167	123	138	55
28	96	724	1080	395	466	377	955	787	172	93	134	55
29	94	2310	978	361	---	325	787	665	196	83	177	52
30	92	1760	801	356	---	300	662	647	175	75	109	50
31	92	---	679	364	---	308	---	545	---	72	84	---
TOTAL	4174	18546	32885	13184	26550	10788	27963	41808	12336	5078	3496	1939
MEAN	135	618	1061	425	948	348	932	1349	411	164	113	64.6
MAX	358	2310	3050	746	3400	468	2860	4750	1620	720	250	143
MIN	92	90	461	220	329	272	315	496	163	72	64	49
CFSM	.42	1.94	3.33	1.33	2.97	1.09	2.92	4.23	1.29	.51	.35	.20
IN.	.49	2.16	3.83	1.54	3.10	1.26	3.26	4.88	1.44	.59	.41	.23

CAL YR 1982 TOTAL 239967 MEAN 657 MAX 6260 MIN 90 CFSM 2.06 IN 27.98
WTR YR 1983 TOTAL 198747 MEAN 545 MAX 4750 MIN 49 CFSM 1.71 IN 23.19

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1983

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		POTOMAC RIVER BASIN					
01622400	Buffalo Branch tributary near Christian, Va.	Lat 38°11'55", long 79°13'10", Augusta County, at culvert on State Highway 42, 1.3 mi north of Christian. Datum of gage is 1,622.53 ft National Geodetic Vertical Datum of 1929.	0.49	1967-83	3-19-83	2.92	(*)
01629945	Chub Run near Stanley, Va.	Lat 38°34'31", long 78°27'32", Page County, at culvert on State Highway 689, 2.2 mi east of Stanley. Datum of gage is 1,023.05 ft National Geodetic Vertical Datum of 1929.	3.16	a1959-69, 1970-83	5-16-83	1.97	156
01632970	Crooked Run near Mt. Jackson, Va.	Lat 38°45'44", long 78°41'06", Shenandoah County, at culvert on State Highway 263, 2.3 mi west of Mt. Jackson. Datum of gage is 962.84 ft National Geodetic Vertical Datum of 1929.	6.49	1972-83	5-17-83	4.04	462
01633650	Pughs Run near Woodstock, Va.	Lat 38°55'48", long 78°32'43", Shenandoah County, at culvert on State Highway 623, 4.0 mi northeast of Woodstock. Datum of gage is 1,027.27 ft National Geodetic Vertical Datum of 1929.	3.66	1972-83	5-17-83	4.11	67
01652500	Fourmile Run at Alexandria, Va.	Lat 38°50'35", long 77°05'09", Arlington County, at upstream side of bridge on Shirlington Road, at Arlington County-Alexandria City line, 0.1 mi upstream from Interstate Highway 95, and 2.5 mi upstream from mouth. Datum of gage is 28.57 ft National Geodetic Vertical Datum of 1929.	13.8	1951-69‡, 1970-73, 1974-75‡, 1976-77b, 1979-82‡, 1983	6-21-83	7.92	2,770
01653000	Cameron Run at Alexandria, Va.	Lat 38°48'23", long 77°06'36", Fairfax County, at left downstream side of Southern Railway bridge, at Alexandria, and 800 ft downstream from confluence of Holmes Run and Backlick Run. Datum of gage is 31.07 ft National Geodetic Vertical Datum of 1929.	33.7	1955-80‡, 1981-83	6-21-83	9.03c	5,710

* Discharge not determined.
‡ Operated as a continuous-record gaging station.
a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.
b Prior to Sept. 28, 1973, at site 0.4 mi downstream at datum 6.02 ft lower.
c From flood profile.

Annual maximum discharge at crest-stage partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum Date	Annual Maximum Gage height (ft)	Annual Maximum Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued					
01656200	Broad Run near Warrenton, Va.	Lat 38°48'25", long 77°48'47", Fauquier County, at culvert on State Highway 17, 7 mi north of Warrenton.	2.94	1950-78, 1983	4-10-83	5.19	99
		GREAT WICOMICO RIVER BASIN					
01661600	Great Wicomico River near Horse Head, Va.	Lat 37°53'15", long 76°27'00", Northumberland County, at culvert on State Highway 604, 1.7 mi west of Horse Head.	6.98	1969-83	4-16-83	5.24	760
		RAPPAHANNOCK RIVER BASIN					
01661900	Carter Run near Marshall, Va.	Lat 38°47'57", long 77°52'09", Fauquier County, on left bank 50 ft upstream from farm road, 1.2 mi downstream from Horner Run, 4.7 mi south of Marshall, 6.7 mi southwest of The Plains, and 9 mi upstream from mouth. Datum of gage is 388.39 ft National Geodetic Vertical Datum of 1929.	19.5	1976-82‡, 1983	4-10-83	7.04	1,640
01665050	Pony Mountain Branch near Culpeper, Va.	Lat 38°27'04", long 77°57'24", Culpeper County, at culvert on State Highway 3, 2.7 mi southeast of Culpeper.	.30	a1958-69, 1970-83	4-10-83	1.59	52
01668300	Farmers Hall Creek near Champlain, Va.	Lat 38°00'05", long 76°58'40", Essex County, at culvert on U.S. Highway 17, 1.2 mi southeast of Champlain. Datum of gage is 42.10 ft National Geodetic Vertical Datum of 1929.	2.18	1966-83	4-15-83	3.94	42
		PIANKATANK RIVER BASIN					
01669800	My Ladys Swamp near Saluda, Va.	Lat 37°34'34", long 76°31'30", Middlesex County, at culvert on State Highway 629, 4.4 mi southeast of Saluda. Datum of gage is 4.16 ft National Geodetic Vertical Datum of 1929.	4.81	1969-83	4-16-83	5.36	167
		YORK RIVER BASIN					
01671615	Foster Creek near Ferncliff, Va.	Lat 37°57'35", long 78°11'20", Louisa County, at culvert on U.S. Highway 250, 4.6 mi northwest of Ferncliff. Datum of gage is 424.22 ft National Geodetic Vertical Datum of 1929.	.61	a1960-68, 1969-83	4-24-83	4.89	223
01671650	Waldrop Creek near Louisa, Va.	Lat 38°00'08", long 78°04'22", Louisa County, at culvert on State Highway 632, 4.2 mi southwest of Louisa. Datum of gage is 361.41 ft National Geodetic Vertical Datum of 1929.	2.85	1969-83	4-24-83	5.47	212
01671750	Harris Creek near Trevilians, Va.	Lat 38°01'02 , long 78°03'06", Louisa County, at culvert on State Highway 632, 2.7 mi southeast of Trevilians.	3.31	1969-83	4-24-83	5.86	529
01674200	Reedy Creek near Dawn, Va.	Lat 37°52'55", long 77°21'35", Caroline County, at bridge on U.S. Highway 301, 3.3 mi north of Dawn.	16.8	1950-69, 1972-83	4-15-83	4.62	170

‡ Operated as a continuous-record gaging station.
a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

Annual maximum discharge at crest-stage partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		YORK RIVER BASIN--Continued					
01674700	Aylett Creek at Aylett, Va.	Lat 37°47'05", long 77°06'23", King William County, at culvert on U.S. Highway 360 at Aylett. Datum of gage is 26.72 ft National Geodetic Vertical Datum of 1929.	6.17	1969-83	4-15-83	4.57	(*)
		JAMES RIVER BASIN					
02012950	Sweet Springs Creek tributary at Sweet Chalybeate, Va.	Lat 37°39'25", long 80°14'10", Alleghany County, at culvert on State Highway 311, 0.9 mi north of Sweet Chalybeate. Datum of gage is 1,926.94 ft National Geodetic Vertical Datum of 1929.	.66	1966-75, 1978-83	-	<4.14	<36
02015600	Cowpasture River near Head Waters, Va.	Lat 38°19'30", long 79°26'14", Augusta County, at bridge on U.S. Highway 250, 1.2 mi west of Head Waters. Datum of gage is 1,985.65 ft National Geodetic Vertical Datum of 1929.	11.3	1949-83	4-15-83	3.55	190
02017300	Craig Creek at New Castle, Va.	Lat 37°30'06", long 80°06'18", Craig County, at bridge on State Highway 616, at New Castle. Datum of gage is 1,245.69 ft National Geodetic Vertical Datum of 1929.	112	1967-83	3-18-83	12.11	5,780
02017700	Craig Creek tributary near New Castle, Va.	Lat 37°33'21", long 79°59'52", Craig County, at culvert on State Highway 606, 7.1 mi northeast of New Castle.	2.05	1968-83	3-18-83	3.56	58
02018800	North Fork near Fincastle, Va.	Lat 37°32'07", long 79°56'03", Botetourt County, at culvert on State Highway 606, 3.9 mi northwest of Fincastle. Datum of gage is 1,248.65 ft National Geodetic Vertical Datum of 1929.	4.17	1968-83	3-18-83	7.17	654
02020100	Renick Run near Buchanan, Va.	Lat 37°35'27", long 79°38'04", Botetourt County, at culvert on Frontage Road of Interstate Highway 81, 4.8 mi northeast of Buchanan. Datum of gage is 1,261.85 ft National Geodetic Vertical Datum of 1929.	2.06	1967-83	4-24-83	5.24	376
02021700	Cedar Grove Branch near Rockbridge Baths, Va.	Lat 37°53'00", long 79°23'10", Rockbridge County, at culvert on State Highway 39, 1.8 mi southeast of Rockbridge Baths. Datum of gage is 1,041.22 ft National Geodetic Vertical Datum of 1929.	12.3	1967-83	4-24-83	7.26	394
02023300	South River near Steeles Tavern, Va.	Lat 37°55'50", long 79°09'55", Augusta County, at bridge on State Highway 608, 3 mi east of Steeles Tavern.	15.7	1951-83	4-24-83	3.86	780
02027700	Buffalo River tributary near Amherst, Va.	Lat 37°33'45", long 78°57'35", Amherst County, at culvert on U.S. Highway 60, 5.2 mi southeast of Amherst. Datum of gage is 583.66 ft National Geodetic Vertical Datum of 1929.	.46	1966-83	4- 2-83	3.93	48

* Discharge not determined.
< Less than.

Annual maximum discharge at crest-stage partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Annual Maximum Date	Annual Maximum Gage height (ft)	Annual Maximum Discharge (ft³/s)
		JAMES RIVER BASIN--Continued					
02030800	Stockton Creek near Afton, Va.	Lat 38°01'48", long 78°48'30", Albemarle County, at culvert on State Highway 6, 1.7 mi east of Afton. Datum of gage is 835.27 ft National Geodetic Vertical Datum of 1929.	2.80	1967-83	4- 3-83	e9.09	f198
02032200	Doyles River near White Hall, Va.	Lat 38°12'10", long 78°40'17", Albemarle County, at bridge on State Highway 810, 5.9 mi north of White Hall. Datum of gage is 928.08 ft National Geodetic Vertical Datum of 1929.	6.70	1967-83	8-10-83	10.21	(*)
02032300	Muddy Run near Stanardsville, Va.	Lat 38°14'05", long 78°37'02", Albemarle County, at bridge on State Highway 810, 11 mi southwest of Stanardsville. Datum of gage is 756.79 ft National Geodetic Vertical Datum of 1929.	3.36	1967-83	4- 3-83	6.87	(*)
02032540	Haneytown Creek near Stanardsville, Va.	Lat 38°16'48", long 78°30'50", Greene County, at bridge on State Highway 810, 4.5 mi west of Stanardsville. Datum of gage is 616.34 ft National Geodetic Vertical Datum of 1929.	4.45	1967-83	-	<12.33	(*)
02032550	Lynch River at Nortonsville, Va.	Lat 38°14'16", long 78°32'32", Albemarle County, at bridge on State Highway 810, 7 mi southwest of Stanardsville. Datum of gage is 591.70 ft National Geodetic Vertical Datum of 1929.	13.6	1967-83	4- 3-83	13.63	(*)
02032700	Schenks Branch at Charlottesville, Va.	Lat 38°02'32", long 78°28'30", Charlottesville City, at bridge just upstream from U.S. Highway 250 bypass. Datum of gage is 371.63 ft National Geodetic Vertical Datum of 1929.	1.34	1950-77, 1979-83	4- 3-83	>6.00	(*)
02033300	Moores Creek near Charlottesville, Va.	Lat 38°00'25", long 78°34'25", Albemarle County, at culvert on access road, 150 ft north of U.S. Highway 29, and 4 mi southwest of Charlottesville.	3.52	1967-77, 1979-83	4- 3-83	(d)	>185
02037800	Falling Creek near Midlothian, Va.	Lat 37°27'15", long 77°35'20", Chesterfield County, at bridge on State Highway 653, 4 mi southeast of Midlothian. Datum of gage is 170.06 ft National Geodetic Vertical Datum of 1929.	18.1	1951-83	3-21-83	6.02	604
02040500	Flat Creek near Amelia, Va.	Lat 37°23'27", long 78°03'45", Amelia County, at bridge on State Highway 681, 6.0 mi northwest of Amelia.	73.0	1946-70, 1972-83	7-14-75† 1-27-76† 10-20-76† 3-11-78† 9- 5-79† 1-18-80† 6- 7-81† 6- 5-82† 4-16-83	12.14 8.64 7.84 10.13 11.99 7.79 5.52 7.42 8.47	4,960 1,730 1,260 2,840 4,790 1,240 389 1,060 1,620
02042250	Bailey Branch tributary at Spring Grove, Va.	Lat 37°10'29", long 76°59'13", Surry County, at culvert on State Highway 10, 1.0 mi northwest of Spring Grove. Datum of gage is 61.39 ft National Geodetic Vertical Datum of 1929.	.71	1967-83	4-16-83	3.40	42

* Discharge not determined.
† Not previously published.
< Less than.
> Greater than.
d Insects destroyed cork in gage pipe.
e Affected by backwater from debris.
f Estimated on percentage of constriction determined by levels and correlation methods.

Annual maximum discharge at crest-stage partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum Date	Annual Maximum Gage height (ft)	Annual Maximum Discharge (ft^3/s)
JAMES RIVER BASIN--Continued							
02042300	Horsepen Branch at Richmond, Va.	Lat 37°35'45", long 77°30'40", Henrico County, at culvert on U.S. Highway 250 (Broad Street), at Richmond.	1.35	1965-83	12-12-82	3.66	616
02042400	Jordans Branch at Richmond, Va.	Lat 37°35'10", long 77°29'55", Henrico County, at bridge on U.S. Highway 250 (Broad Street), at Richmond.	2.41	1965-83	-	<8.46	(*)
02042780	West Branch Long Hill Swamp near Lightfoot, Va.	Lat 37°18'50", long 77°46'01", James City County, at culvert on State Highway 612, 2.0 mi south of Lightfoot.	2.47	1970-76, 1978-83	4-15-83	>3.57	>95
CHOWAN RIVER BASIN							
02044200	Falls Creek tributary near Victoria, Va.	Lat 37°02'04", long 78°10'26", Lunenburg County, at culvert on State Highway 49, 3.6 mi northeast of Victoria.	.34	1962-83	10-25-82	3.55	38
02046500	Anderson Branch at Sussex, Va.	Lat 36°55'10", long 77°15'45", Sussex County, at bridge on State Highway 40, 1.0 mi east of Sussex. Datum of gage is 58.00 ft National Geodetic Vertical Datum of 1929.	5.35	1949-56‡, 1967-83	2-11-83	4.81	75
02050050	Blackwater River tributary near Holland, Va.	Lat 36°38'44", long 76°51'29", Nansemond County, at culvert on State Highway 189, 4.9 mi southwest of Holland. Datum of gage is 29.25 ft National Geodetic Vertical Datum of 1929.	2.76	1967-83	4-16-83	7.43	380
ROANOKE RIVER BASIN							
02057700	Powder Mill Creek at Rocky Mount, Va.	Lat 37°00'26", long 79°52'25", Franklin County, at culvert on U.S. Highway 220 bypass at Rocky Mount.	.64	1967-83	4-10-83	15.12	160
02065100	Snake Creek near Brookneal, Va.	Lat 37°00'42", long 78°57'52", on U.S. Highway 501, 2.1 mi south of Brookneal.	1.68	1967-83	4- 3-83	7.54	424
02065300	Right Hand Fork near Appomattox, Va.	Lat 37°16'12", long 78°49'14", Appomattox County, at culvert on State Highway 727, 5.2 mi south of Appomattox.	2.08	1967-83	4-10-83	5.22	129
02075350	Powells Creek near Turbeville, Va.	Lat 36°34'50", long 79°11'20", Halifax County, at culvert on U.S. Highway 58, 8.8 mi southwest of Turbeville. Datum of gage is 383.95 ft National Geodetic Vertical Datum of 1929.	.28	a1958-69, 1970-83	4-15-83	5.27	246
02076000	Dan River at South Boston, Va.	Lat 36°41'37", long 78°54'09", city of South Boston, on left bank 100 ft upstream from Norfolk and Western Railroad bridge at South Boston.	2,730	1900-07‡, 1923-52‡, 1953-62g, 1980-83g	3-26-53† 1-25-54† 10-18-54† 2-20-81† 1- 6-82† 4-12-83	22.13 23.85 26.38 <19.5 22.18 23.40	(*) (*) (*) (*) (*) (*)
02076200	Bearskin Creek near Chatham, Va.	Lat 36°50'30", long 79°29'05", Pittsylvania County, at culvert on State Highway 57, 4.5 mi west of Chatham.	4.06	1967-83	4- 3-83	4.93	312

* Discharge not determined.
† Not previously published.
‡ Operated as a continuous-record gaging station.
< Less than.
> Greater than.
a Records furnished by U.S. Department of Agriculture, Soil Conservation Service.
g Operated as a stage-only station.

Annual maximum discharge at crest-stage partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		ROANOKE RIVER BASIN--Continued					
02076700	Black Creek near Mt. Airy, Va.	Lat 36°56'40", long 79°09'56", Pittsylvania County, at culvert on State Highway 40, 1.5 mi east of Mt. Airy.	3.44	1966-83	4- 3-83	5.92	302
		KANAWHA RIVER BASIN					
03165700	Cripple Creek at Cedar Springs, Va.	Lat 36°49'31", long 81°16'45", Wythe County, at bridge on State Highway 749, 0.6 mi southeast of Cedar Springs.	11.3	1967-83	-	<13.9	<360
03167300	Mira Fork tributary near Dugspur, Va.	Lat 36°50'16", long 80°35'47", Carroll County, at culvert on U.S. Highway 221, 2.2 mi northeast of Dugspur. Datum of gage is 2,602.96 ft National Geodetic Vertical Datum of 1929.	.62	1967-83	4-10-83	3.31	62
03167700	Beaverdam Creek at Hillsville, Va.	Lat 36°46'05", long 80°43'33", Carroll County, at culvert on State Highway 1009, 0.2 mi east of Hillsville corporate limits. Datum of gage is 2,373.04 ft National Geodetic Vertical Datum of 1929.	4.75	1962-83	4-10-83	4.72	351
03168750	Thorne Springs Branch near Dublin, Va.	Lat 37°05'30", long 80°44'34", Pulaski County, at pond dam just upstream from U.S. Highway 11, 3.3 mi southwest of Dublin.	4.77	[a]1957-69, 1970-83	4-10-83	1.59	46
		BIG SANDY RIVER BASIN					
03208800	Pound River above Indian Creek at Pound, Va.	Lat 37°07'26", long 82°36'29", Wise County, on left bank at Pound, 1,600 ft downstream from confluence of North and South Fork, 0.5 mi upstream from U.S. Highway 23, and 0.7 mi above Indian Creek. Datum of gage is 1,535.64 ft National Geodetic Vertical Datum of 1929.	36.7	1966-78*, 1979-83	5-16-83	7.32	667
03208850	Pound River below Bold Camp Creek, at Pound, Va.	Lat 37°07'19", long 82°35'55", Wise County, on left bank at Pound, 1,000 ft upstream from State Highway 83, 0.3 mi below Bold Camp Creek, and 0.5 mi below Indian Creek. Datum of gage is 1,527.36 ft National Geodetic Vertical Datum of 1929.	61.2	1966-78*, 1979-83	5-16-83	10.30	929
03208900	Pound River near Georges Fork, Va.	Lat 37°09'51", long 82°31'30", Dickenson County, on right bank 50 ft upstream from bridge on State Highway 624, 150 ft upstream from Camp Creek, and 2.6 mi northwest of Georges Fork. Datum of gage is 1,470.39 ft National Geodetic Vertical Datum of 1929.	82.5	1964-82*, 1983	5-16-83	6.48	1,410
03209200	Russell Fork at Bartlick, Va.	Lat 37°14'45", long 82°19'25", Dickenson County, on left bank at Bartlick, just upstream from bridge on State Highway 611, and 0.2 mi downstream from Pound River. Datum of gage is 1,165.00 ft National Geodetic Vertical Datum of 1929.	526	1963-82*, 1983	4-24-83	11.94	5,280

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* Operated as a continuous-record gaging station.

< Less than.

[a] Records furnished by U.S. Department of Agriculture, Soil Conservation Service.

Annual maximum discharge at crest-stage partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		BIG SANDY RIVER BASIN--Continued					
03213590	Knox Creek at Kelsa, Va.	Lat 37°27'02", long 82°03'34", Buchanan County, on left bank at bridge on State Highway 697, 0.3 mi downstream from Pawpaw Creek, and 0.8 mi northeast of Kelsa.	84.3	1980-81*, 1982-83	12-16-82	8.96	2,690
		TENNESSEE RIVER BASIN					
03471200	South Fork Holston River at Teas, Va.	Lat 36°46'22", long 81°27'05", Smyth County, at bridge on State Highway 601, at Teas. Datum of gage is 2,496.98 ft National Geodetic Vertical Datum of 1929.	31.1	1967-83	2- 2-83	11.88	578
03472500	Beaverdam Creek at Damascus, Va.	Lat 36°37'40", long 81°47'28", Washington County, at Damascus, 0.6 mi upstream from mouth. Datum of gage is 1,946.66 ft National Geodetic Vertical Datum of 1929.	56.0	1948-59*, 1960-83	12-16-82	3.38	1,170
03473500	Middle Fork Holston River at Groseclose, Va.	Lat 36°53'19", long 81°20'51", Smyth County, 10 ft downstream from bridge on State Highway 679, at Groseclose. Datum of gage is 2,442.86 ft National Geodetic Vertical Datum of 1929.	7.39	1948-57*, 1958-83	6- 4-83	3.13	77
03474000	Middle Fork Holston River at Seven Mile Ford, Va.	Lat 36°48'26", long 81°37'20", Smyth County, on right bank at downstream side of bridge on U.S. Highway 11, at Seven Mile Ford, and 0.3 mi upstream from Meade Creek. Datum of gage is 1,960.00 ft National Geodetic Vertical Datum of 1929.	132	1942-81*, 1982-83	12-16-82	3.26	1,580
03474700	Hutton Creek near Chilhowie, Va.	Lat 36°47'00", long 81°44'05", Washington County, at bridge on U.S. Highway 11, 3.3 mi southwest of Chilhowie.	8.32	1967-83	-	<10.5	<190
03474800	Hall Creek near Glade Spring, Va.	Lat 36°45'47", long 81°48'15", Washington County, at bridge on U.S. Highway 11, 2.5 mi south of Glade Spring.	7.90	1967-83	-	<9.60	<200
03475600	Cedar Creek near Meadowview, Va.	Lat 36°44'50", long 81°51'20", Washington County at culvert on U.S. Highway 11, 1.2 mi south of Meadowview. Datum of gage is 2,034.66 ft National Geodetic Vertical Datum of 1929.	3.38	1967-83	12-16-82	5.74	27
03475700	Spring Creek near Abingdon, Va.	Lat 36°40'43", long 82°02'29", Washington County, at culvert on U.S. Highway 11, 3.8 mi southwest of Abingdon. Datum of gage is 1,977.54 ft National Geodetic Vertical Datum of 1929.	2.99	1967-83	6- 4-83	4.15	145
03487800	Lick Creek near Chatham Hill, Va.	Lat 36°57'44", long 81°28'21", Smyth County, 270 ft upstream from bridge on State Highway 42, 2.9 mi east of Chatham Hill. Datum of gage is 2,076.97 ft National Geodetic Vertical Datum of 1929.	25.5	1966-68*, 1969-83	3-21-83	4.44	633
03488450	Brumley Creek at Brumley Gap, Va.	Lat 36°47'30", long 82°01'10", Washington County, on left bank 20 ft downstream from bridge on State Highway 611, 0.2 mi above mouth, and 0.8 mi southeast of Brumley Gap. Datum of gage is 1,489.16 ft National Geodetic Vertical Datum of 1929.	21.1	1979-81*, 1982-83	11-29-82	4.16	433

* Operated as a continuous-record gaging station.
< Less than.

Annual maximum discharge at crest-stage partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Annual Maximum		
					Date	Gage height (ft)	Discharge (ft³/s)
		TENNESSEE RIVER BASIN--Continued					
03489800	Cove Creek near Shelleys, Va.	Lat 36°39'13", long 82°21'16", Scott County, at bridge on U.S. Highway 58, 2 mi north of Shelleys. Datum of gage is 1,381.53 ft National Geodetic Vertical Datum of 1929.	17.3	1951-83	11-29-82	4.99	517
03489870	Big Moccasin Creek at Collinwood, Va.	Lat 36°44'16", long 82°19'25", Russell County, at bridge on State Highway 612, at Collinwood. Datum of gage is 1,796.34 ft National Geodetic Vertical Datum of 1929.	41.9	1967-68*, 1969-83	11-29-82	2.62	510
03490000	North Fork Holston River near Gate City, Va.	Lat 36°36'31", long 82°34'05", Scott County, on left bank 75 ft upstream from bridge on U.S. Highway 23, 1.6 mi downstream from Big Moccasin Creek, and 2.1 mi southeast of Gate City. Datum of gage is 1,197.56 ft National Geodetic Vertical Datum of 1929.	672	1931-81*, 1982-83	11-29-82	7.97	7,600
03524500	Guest River at Coeburn, Va.	Lat 36°55'45", long 82°27'23", Wise County, on right bank 30 ft downstream from bridge on State Highway 72, 1.0 mi southeast of Coeburn, and 6.3 mi above mouth. Datum of gage is 1,925.80 ft National Geodetic Vertical Datum of 1929.	87.3	1949-59*, 1959-78, 1979-81*, 1982-83	12-16-82	6.32	1,450
03524900	Stony Creek at Ka, Va.	Lat 36°48'57", long 82°37'02", Scott County, on left bank along State Highway 619, at Ka, and 4.2 mi above mouth.	30.9	1980-81*, 1982-83	12-16-82	5.33	1,890
03526000	Copper Creek near Gate City, Va.	Lat 36°40'26", long 82°33'57", Scott County, on right bank at upstream side of highway bridge, 2.6 mi northeast of Gate City. Datum of gage is 1,301.95 ft National Geodetic Vertical Datum of 1929.	106	1948-72*, 1973-83	4-25-83	7.77	1,670
03527000	Clinch River at Speers Ferry, Va.	Lat 36°38'55", long 82°45'02", Scott County, on right bank 200 ft downstream from bridge on U.S. Highway 58, 0.5 mi downstream from Copper Creek, and 0.8 mi northwest of Speers Ferry. Datum of gage is 1,196.52 ft National Geodetic Vertical Datum of 1929.	1,126	1920-76*, 1977-78, 1979-81*, 1982-83	4-25-83	11.14	9,110
03529500	Powell River at Big Stone Gap, Va.	Lat 36°52'08", long 82°46'32", Wise County, on right bank 10 ft upstream from bridge on U.S. Highway 23, at Big Stone Gap, and 1.0 mi upstream from South Fork Powell River. Datum of gage is 1,459.07 ft National Geodetic Vertical Datum of 1929.	112	1945-59*, 1960-77, 1979-81*, 1982-83	5-23-83	4.69	2,220
03530500	North Fork Powell River at Pennington Gap, Va.	Lat 36°46'26", long 83°01'59", Lee County, near right bank on downstream side of bridge on State Highway 621, 0.8 mi north of Pennington Gap, and 4.7 mi above mouth. Datum of gage is 1,363.02 ft National Geodetic Vertical Datum of 1929.	71.4	1945-51*, 1952-77, 1979-81*, 1982-83	5-23-83	5.07	1,530

* Operated as a continuous-record gaging station.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream when continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1983

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN				
01613570	Back Creek at at Gainesboro, Va.	Lat 37°17'09", long 78°15'51", Frederick County, at bridge on State Highway 684, 0.25 mi above Winchester and Western Railroad, and 0.7 mi northwest of Gainesboro.	-	1951-54, 1982	11-16-82 7-26-83	4.01 5.05
01621000	Dry River at Rawley Springs, Va.	Lat 38°30'10", long 79°03'14", Rockingham County, at bridge on State Highway 847, at Rawley Springs, and 1.2 mi below Harrisonburg Reservoir.	72.6	1946-48*, 1952-55, 1963, 1982	11-17-82 7-27-83	25.7 1.38
01622230	Middle River at Trimbles Mill, near Swoope, Va.	Lat 38°08'10", long 79°13'06", Augusta County, at bridge on State Highway 707, at Trimbles Mill, and 1.7 mi southwest of Swoope.	-	1982	11-17-82 7-27-83	5.88 5.57
01631500	North Fork Shenandoah River at Fulks Run, Va.	Lat 38°40'18", long 78°55'47", Rockingham County, at bridge on State Highway 917, 0.75 mi above Little Dry River, and 0.8 mi northwest of old site of Fulks Run.	-	1952-54, 1982	11-17-82 7-27-83	11.0 4.14
01632840	Smith Creek near Lacey Spring, Va.	Lat 38°32'18", long 78°45'03", Rockingham County, at low-water culvert on State Highway 717, 0.4 mi above Dry Fork, and 0.9 mi east of Lacey Spring.	-	1982	11-17-82 7-27-83	4.84 6.36
01633485	Stony Creek near near Liberty Furnace, Va.	Lat 38°53'41", long 78°39'57", Shenandoah County, along State Highway 717, 0.15 mi above Little Stony Creek, and 2.4 mi northeast of Liberty Furnace.	57.0	1968-69, 1982	11-16-82 7-26-83	8.00 5.41
01635250	Passage Creek near Detrick, Va.	Lat 38°47'49", long 78°27'42", Shenandoah County, at bridge on State Highway 776, 0.4 mi above Buck Run, and 4.0 mi southwest of Detrick.	-	1963, 1982	11-16-82 7-26-83	5.93 2.28
01636270	Bordon Marsh Run near Boyce, Va.	Lat 39°00'09", long 78°05'51", Warren County, at culvert on State Highway 624, 1.1 mi above mouth, and 6.6 mi southwest of Boyce.	-	1982	11-16-82 7-26-83	2.71 4.88
01643643	Goose Creek at Delaplane, Va.	Lat 38°54'51", long 77°55'19", Fauquier County, at bridge on U.S. Highway 17, just below Crooked Run, and at Delaplane.	45.6	1952-54, 1969, 1981-82	10-22-82 7-25-83	3.66 3.64
01643800	N. F. Goose Creek near Lincoln, Va.	Lat 39°04'38", long 77°41'52", Loudoun County, at bridge on State Highway 722, 0.6 mi above Crooked Run, and 2.5 mi south of Lincoln.	-	1952-54, 1981-82	10-22-82 7-25-83	1.14 3.95
01653700	Little Hunting Creek at Gum Springs, Va.	Lat 38°44'21", long 77°05'20", Fairfax County, 50 ft downstream from U.S. Highway 1, at Gum Springs.	1.78	1960, 1962-63, 1977, 1980-82	10-20-82 7-22-83	.26 .57
01653800	Dogue Creek near Accotink, Va.	Lat 38°43'08", long 77°07'44", Fairfax County, at bridge on U.S. Highway 1, 1.8 mi northeast of Accotink.	10.6	1960-63, 1977, 1980-82	10-20-82 8- 2-83	1.18 2.24

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued				
01656200	Broad Run near Warrenton, Va.	Lat 38°48'25", long 77°48'47", Fauquier County, at culvert on U.S. Highway 17, 2.1 mi above Piney Branch, and 7.0 mi north of Warrenton.	2.94	1953-54, 1956, 1959-61, 1976, 1981-82	10-22-82 7-25-83	0.23 .29
01657890	Neabsco Creek tributary near Dale City, Va.	Lat 38°37'13", long 77°16'35", Prince William County, at bridge on State Highway 638, 0.5 mi above mouth, and 2.0 mi southeast of Dale City.	3.33	1980-82	10-20-82 7-19-83	.83 .76
01660670	Accokeek Creek near Brooke, Va.	Lat 38°22'38", long 77°21'26", Stafford County, 200 ft above bridge on State Highway 609, 1.3 mi southeast of Brooke, and 4.4 mi above mouth.	18.0	1980-82	10-20-82 7-22-83	1.36 4.27
01660765	Upper Machodoc Creek near Dahlgren, Va.	Lat 38°18'57", long 77°05'20", King George County, at bridge on State Highway 616, 1.6 mi below Pepper Mill Creek, and 2.0 mi southwest of Dahlgren.	26.2	1980-82	11- 1-82 8- 8-83	4.12 .86
01660870	Fox Hall Swamp near Potomac Mills, Va.	Lat 38°09'24", long 76°57'43", Westmoreland County, at bridge on State Highway 639, 0.2 mi above Bundys Swamp, and 1.2 mi southwest of Potomac Mills.	2.28	1980-82	11- 1-82 7-19-83	.79 .32
01661160	Nomini Creek near Neenah, Va.	Lat 38°02'28", long 76°10'22", Westmoreland County, at culvert on State Highway 600, 0.5 mi below Antioch Branch, and 1.0 mi southeast of Neenah.	9.99	1980-82	10-28-82 8- 2-83	5.42 5.05
		RAPPAHANNOCK RIVER BASIN				
01661840	Rappahannock River near Flint Hill, Va.	Lat 38°45'32", long 78°01'42", Rappahannock and Fauquier Counties, at bridge on State Highway 647, 0.1 mi below Jordan River, and 4.0 mi east of Flint Hill.	-	1943, 1950-54, 1963, 1976-77, 1981-82	10-22-82 7-25-83	9.24 5.29
01662110	Hazel River near Woodville, Va.	Lat 38°36'27", long 78°14'15", Rappahannock County, at bridge on State Highway 231, 3.5 mi west of Woodville, and 8.0 mi above mouth.	5.54	1950-54, 1961, 1963, 1981-82	10-21-82 7-26-83	4.04 3.34
01662500	Rush River at Washington, Va.	Lat 38°42'50", long 78°09'05", Rappahannock County, at bridge on old U.S. Highway 211, 0.2 mi east of Washington, and 4.6 mi above mouth.	14.7	1952, 1953-77*, 1978, 1981-82	10-22-82 7-26-83	2.62 .18
01663000	Thornton River near Laurel Mills, Va.	Lat 38°37'41", long 78°03'47", Rappahannock County, at bridge on State Highway 729, 2.0 mi southeast of Laurel Mills, and 2.9 mi below Battle Run.	142	1942, 1944-56b, 1978, 1981-82	10-22-82 7-25-83	25.3 17.9
01665220	Deep Run near Goldvein, Va.	Lat 38°27'07", long 77°37'46", Fauquier and Stafford Counties, at bridge on State Highway 615, 1.5 mi east of Goldvein, and 3.3 mi above mouth.	-	1963, 1981-82	10-28-82 8- 2-83	3.22 .22
01665400	Conway River near Stanardsville, Va.	Lat 38°19'58", long 78°23'53", Madison and Greene Counties, at bridge on State Highway 230, 2.2 mi above mouth, and 2.8 mi northeast of Stanardsville.	25.8	1943, 1950-54, 1963, 1978, 1981-82	10-21-82 7-26-83	3.31 2.42
01665850	Robinson River near Criglersville, Va.	Lat 38°26'54", long 78°16'44", Madison County, at bridge on State Highway 231, 0.7 mi above Leathers Run, and 1.4 mi southeast of Criglersville.		1950-54, 1964 1981-82	10-21-82 7-26-83	10.8 9.35

* Operated as a continuous-record gaging station.
b Operated as a nonrecording continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		RAPPAHANNOCK RIVER BASIN--Continued				
01667848	Black Walnut Run at Burr Hill, Va.	Lat 38°20'26", long 77°51'34", Orange County, 10 ft above mouth, at Burr Hill.	11.9	1981-82	10-21-82 7-26-83	2.11 1.13
01667850	Mine Run at Burr Hill, Va.	Lat 38°20'36", long 77°51'33", Orange County, at bridge on State Highway 692, just downstream from Black Walnut Run, and at Burr Hill.	-	1943, 1951, 1953, 1963, 1981-82	10-21-82 7-26-83	4.01 3.29
01668100	White Oak Run near Passapatanzy, Va.	Lat 38°15'38", long 77°21'43", Stafford County, at culvert on State Highway 603, 1.0 mi above mouth, and 4.0 mi southwest of Passapatanzy.	8.29	1980-82	10-20-82 7-19-83	.007 .025
01668200	Gingoteague Run near Port Royal, Va.	Lat 38°12'38", long 77°09'08", King George County, at culvert on State Highway 623, 3.4 mi northeast of Port Royal, and 3.9 mi above mouth.	2.82	1968-69, 1980-82	10-20-82 7-19-83	.059 .14
01668305	Farmers Hall Creek at Rt. 631, near Champlain, Va.	Lat 38°00'53", long 76°57'47", Essex County, at culvert on State Highway 631, 0.35 mi below Rouzie Swamp, and 1.6 mi east of Champlain.	3.65	1980-82	11- 1-82 8- 2-83	.56 .069
01669100	Totuskey Creek near Emmerton, Va.	Lat 37°54'47", long 76°39'29", Richmond County, at bridge at State Highway 619, just below confluence with Mill Branch, and 1.5 mi northeast of Emmerton.	28.4	1980-82	10-28-82	9.78
01669150	Bellwood Swamp near Lancaster, Va.	Lat 37°46'47", long 76°29'47", Lancaster County, at culvert on State Highway 201, 1.5 mi above mouth, and 1.8 mi northwest of Lancaster.	8.23	1980-82	10-28-82 7-21-83	3.98 3.40
		PIANKATANK RIVER BASIN				
01669400	Timber Branch Swamp tributary at Dragonville, Va.	Lat 37°41'25", long 76°46'25", King and Queen County, at culvert on State Highway 610, 0.15 mi above mouth, and 0.5 mi southeast of Dragonville.	.61	1980-82	11- 2-82 7-21-83	.23 .22
01669810	Healys Pond tributary near Harmony Village, Va.	Lat 37°34'53", long 76°30'24", Middlesex County, at culvert on State Highway 620, 0.7 mi above Healys Pond, and 1.8 mi southwest of Harmony Village.	.72	1980-82	10-28-82 7-21-83	.47 .54
		CHESAPEAKE BAY				
01669850	Queens Creek near Blakes, Va.	Lat 37°29'22", long 76°22'55", Mathews County, at culvert on State Highway 626, 1.0 mi southwest of Blakes.	1.56	1980-82	10-22-82 7-20-83	0 0
01669885	North River tributary near North, Va.	Lat 37°28'17", long 76°25'15", Mathews County, at culvert on State Highway 657, 0.1 mi above mouth, and 2.0 mi north of North.	1.04	1980-82	10-22-82 7-20-83	0 (a)
		WARE RIVER BASIN				
01670010	Beaverdam Swamp tributary No. 2 at Ark, Va.	Lat 37°26'35", long 76°34'27", Gloucester County, at culvert on State Highway 606, 0.4 mi north of Ark, and 2.4 mi above mouth.	1.29	1949-55, 1980-82	10-22-82 7-20-83	.20 .15

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		WARE RIVER BASIN--Continued				
01670020	Beaverdam Swamp at Gloucester, Va.	Lat 37°25'34", long 76°31'48", Gloucester County, at bridge on State Highway 616, 0.7 mi northwest of Gloucester, and 3.0 mi above Cow Creek.	22.1	1949-54, 1980-82	10-22-82 7-20-83	4.72 2.45
		YORK RIVER BASIN				
01670120	Mountain Run near Gordonsville, Va.	Lat 38°09'39", long 78°05'36", Orange County, at bridge on State Highway 643, 0.8 mi above confluence with Negro Run, and 4.6 mi east of Gordonsville.	-	1981-82	10-21-82 7-26-83	2.14 1.51
01670200	Pamunkey Creek near Lahore, Va.	Lat 38°09'16", long 77°57'02", Orange County, at bridge on State Highway 651, 1.0 mi above Lake Anna, and 3.3 mi southeast of Lahore.	-	1981-82	10-21-82 7-26-83	7.55 3.02
01671040	Long Creek near Buckner, Va.	Lat 37°55'38", long 77°47'44", Louisa County, at bridge on State Highway 655, 0.9 mi above mouth, and 2.7 mi southwest of Buckner.	-	1981-82	10-29-82 7-28-83	1.44 .46
01671680	South Anna River near Louisa, Va.	Lat 37°58'50", long 78°02'54", Louisa County, at bridge on State Highway 208, 3.6 mi above Roundabout Creek, and 4.3 mi southwest of Louisa.	-	1942, 1944, 1952-54, 1981-82	10-29-82 7-28-83	29.4 6.60
01671950	Deep Creek near Apple Grove, Va.	Lat 37°51'57", long 77°54'53", Louisa County, at culvert on State Highway 640, 0.4 mi above mouth, and 2.0 mi southwest of Apple Grove.	-	1981-82	10-29-82 7-28-83	1.24 .33
01672200	Taylors Creek near Montpelier, Va.	Lat 37°47'49", long 77°43'27", Hanover County, at culvert on State Highway 715, 2.7 mi southwest of Montpelier, and 6.8 mi above mouth.	-	1981-82	10-29-82 7-28-83	2.26 (a)
01672800	Newfound River near Ashland, Va.	Lat 37°50'35", long 77°32'30", Hanover County, at bridge on State Highway 685, 0.1 mi below Beaver Creek, 1.3 mi west of Hanover Academy, and 5.8 mi northwest of Ashland.	-	1952-54, 1981-82	10-28-82 8- 2-83 9-27-83	16.3 .73 .81
01673500	Totopotomy Creek near Atlee, Va.	Lat 37°40'09", long 77°22'58", Hanover County, at culvert on U.S. Highway 301, 0.7 mi above Opossum Creek, and 1.6 mi northeast of Atlee.	5.89	1949-77*, 1981-82	10-28-82 8- 2-83	2.17 .64
01673600	Matadequin Creek near Tunstall, Va.	Lat 37°37'02", long 77°08'17", Hanover and New Kent Counties, at bridge on State Highway 606, 1.3 mi above mouth, and 3.2 mi northwest of Tunstall.	29.1	1963, 1980-82	11- 2-82 7-25-83	9.26 14.4
01673620	Acquinton Creek near King William, Va.	Lat 37°41'04", long 77°02'44", King William County, at culvert on State Highway 629, 1.6 mi west of King William, and 3.9 mi above mouth.	8.93	1980-82	11- 2-82 8- 3-83	1.20 .056
01673700	Catharpin Run near Brokenburg, Va.	Lat 38°13'22", long 77°43'30", Spotsylvania County, at bridge on State Highway 608, 0.1 mi above mouth, and 5.4 mi north of Brokenburg.	-	1981-82	10-28-82 8- 2-83	1.71 0
01673900	Poni River tributary No. 1 near Guinea, Va.	Lat 38°09'07", long 77°27'16", Caroline County, at bridge on State Highway 607, 0.7 mi above mouth, and 1.0 mi northwest of Guinea.	6.15	1980-82	11- 1-82 7-22-83	1.94 .77

* Operated as a continuous-record gaging station.
a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
YORK RIVER BASIN--Continued						
01673960	Mat River near Marye, Va.	Lat 38°06'23", long 77°06'07", Spotsylvania County, at bridge on State Highway 647, 1.8 mi above confluence with Ta River, and 2.0 mi northwest of Marye.	-	1943, 1952-54, 1963, 1978, 1981-82	10-28-82 8- 2-83	4.12 .064
01674172	Polecat Creek near Ladysmith, Va.	Lat 37°58'13", long 77°29'13", Caroline County, at bridge on State Highway 652, 0.5 mi above Stevens Mill Run, and 3.3 mi southeast of Ladysmith.	-	1981-82	10-28-82 8- 2-83	2.89 0
01674200	Reedy Creek near Dawn, Va.	Lat 37°52'25", long 77°21'35", Caroline County, at culvert on U.S. Highway 301, 4.3 mi above mouth, and 5.8 mi north of Dawn.	16.8	1950, 1956, 1969, 1980-82	11- 1-82 7-22-83	4.31 1.18
01674250	Maracossic Creek at Sparta, Va.	Lat 37°59'23", long 77°14'30", Caroline County, at bridge on State Highway 721, 0.6 mi west of Sparta, and 0.9 mi above Jacks Creek.	37.6	1952-54, 1980-82	11- 3-82 7-25-83	12.5 9.47
01674300	Maracossic Creek above Beverly Run, near Gether, Va.	Lat 37°55'15", long 77°11'29", Caroline County, at bridge on State Highway 646, 0.6 mi above Beverly Run, and 0.9 mi east of Gether.	72.4	1963, 1980-82	11- 3-82 7-25-83	27.9 14.4
01674350	Beverly Run at Rt. 630, near Alps, Va.	Lat 37°59'29", long 77°09'10", Caroline County, at bridge on State Highway 630, 1.5 mi above King and Queen Swamp, and 1.5 mi east of Alps.	26.5	1952-54, 1980-82	11- 3-82 7-25-83	13.7 10.5
01674400	Beverly Run at Rt. 721, near Alps, Va.	Lat 37°57'08", long 77°10'48", Caroline and King and Queen Counties, at bridge on Highway 721, 2.5 mi above mouth, and 2.8 mi south of Alps.	46.9	1980-82	11- 3-82 7-25-83	18.2 17.3
01674600	Herring Creek near Aylett, Va.	Lat 37°50'12", long 77°10'03", King William County, 100 ft above bridge on State Highway 609, 0.4 mi above Fork Bridge Creek, 1.5 mi southeast of Beulahville, and 5.0 mi northwest of Aylett.	28.9	1952-54, 1980-82	11- 3-82 7-25-83	5.58 .73
01674805	Dickeys Swamp near Stevensville, Va.	Lat 37°44'03", long 76°57'56", King and Queen County, 60 ft below beaver dam, 100 ft below bridge on State Highway 620, 0.1 mi above Market Swamp, and 2.5 mi northwest of Stevensville.	19.8	1980-82	11- 2-82 8- 3-83	7.72 2.73
01675550	Glebe Swamp near Shackelfords, Va.	Lat 37°33'21", long 76°42'38", King and Queen County, at culvert on State Highway 608, 1.4 mi northeast of Shacklefords, and 1.4 mi above mouth.	4.57	1981-82	11- 2-82 7-21-83	1.10 1.32
01677100	France Swamp near Toano, Va.	Lat 37°25'15", long 76°47'06", James City County, at culvert on State Highway 606, 1.1 mi above mouth, and 3.0 mi northeast of Toano.	6.70	1980-82	10-22-82 5- 6-83 7-15-83 8-26-83	1.97 6.62 2.85 1.88
POQUOSON RIVER BASIN						
01677900	Moores Creek near Poquoson, Va.	Lat 37°07'28", long 76°25'15", York County, at culvert on State Highway 171, 0.8 mi above mouth, and 0.8 mi west of Poquoson.	1.03	1980-82	10-22-82 7-20-83	0 0

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		JAMES RIVER BASIN				
02002000	Jackson River at Vanderpool, Va.	Lat 38°22'05", long 79°37'35", Highland County, at bridge on U.S. Highway 220, at Vanderpool, and 0.35 mi above North (East) Fork Jackson River.	-	1982	11-18-82 7-28-83	5.71 3.05
02015800	Thompson Creek near Bath Alum, Va.	Lat 38°02'38", long 79°41'05", Bath County, at bridge on State Highway 39, 1.3 mi above mouth, and 1.3 mi east of Bath Alum.	-	1963, 1982	11-18-82 7-28-83	5.65 3.16
02015930	Pads Creek near Longdale Furnace, Va.	Lat 37°51'54", long 79°43'56", Allegheny County, 200 ft below footbridge, 0.2 mi above mouth, and 4.7 mi northwest of Longdale Furnace.	-	1982	11-18-82 7-28-83	4.44 .77
02016600	Craig Creek near McDonalds Mill, Va.	Lat 37°21'16", long 80°17'23", Craig County, at private road off State Highway 621, 0.1 mi above Muddy Branch, and 3.9 mi north of McDonalds Mill.	-	1982	12- 7-82 8-15-83	24.0 .031
02019100	Spreading Springs Branch at Springwood, Va.	Lat 37°32'57", long 79°44'42", Botetourt County, at bridge on State Highway 632, at Springwood, and 0.1 mi above mouth.	-	1982	11-19-82 7-29-83	.82 2.53
02020170	East Fork Elk Creek at Belfast Trail near Natural Bridge, Va.	Lat 37°34'17", long 79°29'31", Rockbridge County, at footbridge along State Highway 781, 2.0 mi above mouth, and 6.0 mi southeast of Natural Bridge.	-	-	11-19-82 7-29-83	.69 .42
02020200	Calfpasture River at West Augusta, Va.	Lat 38°16'24", long 79°18'02", Augusta County, at bridge on U.S. Highway 220, 0.15 mi above Barn Lick Branch, and 0.4 mi northeast of West Augusta.	12.8	1942, 1953-54, 1956, 1963, 1982	11-17-82 7-28-83	4.23 .138
02023300	South River near Steeles Tavern, Va.	Lat 37°55'50", long 79°09'55", Augusta County, at bridge on State Highway 608, 0.1 mi below confluence of St. Marys River and Spy Run, and 2.1 mi east of Steeles Tavern.	15.7	1941, 1952-53, 1963, 1982	7-15-82† 11-18-82 7-27-83	.84 6.36 0
02024240	South Buffalo Creek near Lexington, Va.	Lat 37°44'14", long 79°34'18", Rockbridge County, at bridge on State Highway 611, 0.2 mi above junction with North Buffalo Creek, and 8.5 mi southwest of Lexington.	-	1982	11-19-82 7-28-83	6.07 6.17
02024760	Reed Creek near Big Island, Va.	Lat 37°30'10", long 79°24'07", Bedford County, at bridge on State Highway 637, 0.3 mi above Meadow Creek, and 3.0 mi southwest of Big Island.	-	1981-82	7-27-83	1.40
02024900	Pedlar River near Buena Vista, Va.	Lat 37°44'48", long 79°16'09", Amherst County, at bridge on U.S. Highway 60, 0.3 mi below Davis Mill Creek, and 4.2 mi east of Buena Vista.	-	1942, 1950-54, 1981-82	11-18-82 7-27-83	7.30 9.71
02025000	Pedlar River near Pedlar Mills, Va.	Lat 37°32'35", long 79°15'10", Amherst County, at bridge on State Highway 635, 1.1 mi south of Pedlar Mills, and 3.6 mi above mouth.	91.0	1942-56‡, 1978, 1981-82	7-27-83	9.85
02025650	Harris Creek near Monroe, Va.	Lat 37°29'35", long 79°09'10", Amherst County, at bridge on State Highway 675, 1.3 mi west of Monroe, and 1.6 mi above Graham Creek.	-	1981-82	11-30-82 7-27-83	33.2 6.53

‡ Operated as a continuous-record gaging station.
† Not previously published.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
JAMES RIVER BASIN--Continued						
02025900	Beaver Creek near Babcock, Va.	Lat 37°21'16", long 79°04'27", Campbell County, at bridge on State Highway 660, 2.3 mi east of Babcock, and 3.0 mi above Little Beaver Creek.	-	1981-82	10-18-82 8- 5-83	6.94 6.42
02026400	South Fork Tye River at Nash, Va.	Lat 37°57'24", long 79°02'47", Nelson County, at private road bridge, 100 ft above confluence with North Fork, and at Nash.	-	1981-82	11-18-82 7-27-83	10.2 8.83
02027600	Buffalo River at Forks of Buffalo, Va.	Lat 37°40'47", long 79°13'20", Amherst County, at bridge on U.S. Highway 60, just below confluence of North and South Forks, and at Forks of Buffalo.	15.9	1942, 1952-54, 1963, 1981-82	7-27-83	3.80
02027670	Buffalo River near Amherst, Va.	Lat 37°36'18", long 79°01'35", Amherst County, at bridge on U.S. Highway 29, 0.7 mi northeast of Amherst, and 1.2 mi below Tribulation Creek.	-	1942, 1952-54, 1963, 1981-82	11-30-82 7-27-83	86.7 20.5
02028450	Sycamore Creek near Howardsville, Va.	Lat 37°40'43", long 78°39'55", Buckingham County, at bridge on State Highway 601, 0.2 mi above mouth, and 3.9 mi south of Howardsville.	-	1981-82	8-9-83	1.56
02028700	Cove Creek near Covesville, Va.	Lat 37°52'06", long 78°43'32", Albemarle County, at culvert on U.S. Highway 29, 1.7 mi southwest of Covesville, and 3.0 mi above Hickory Creek.	4.0	1942, 1944, 1950-54, 1981-82	10-29-82 7-28-83	1.76 1.62
02029200	North Fork Hardware River at Red Hill, Va.	Lat 37°58'03", long 78°37'04", Albemarle County, at bridge on U.S. Highway 29, 0.1 mi below Middle Branch, and 0.5 mi northwest of Red Hill.	11.0	1942, 1950-54, 1956, 1963, 1981-82	10-29-82 7-28-83	8.07 5.54
02030150	Slate River at Buckingham, Va.	Lat 37°33'08", long 78°33'53", Buckingham County, at bridge on U.S. Highway 60, just below Horsepen Creek, and 0.3 mi west of Buckingham.	-	1942, 1952-54, 1963, 1981-82	11-30-82 8- 9-83	63.0 10.0
02030300	Slate River near Dillwyn, Va.	Lat 37°37'08", long 78°29'10", Buckingham County, at bridge on State Highway 20, 0.3 mi below Flat Creek, and 5.2 mi north of Dillwyn.	-	1942, 1952-54, 1963, 1981-82	8- 9-83	20.6
02030850	Stockton Creek near Crozet, Va.	Lat 38°02'37", long 78°41'54", Albemarle County, at bridge on State Highway 635, 1.5 mi south of Crozet, and 2.4 mi above mouth.	-	1953-54, 1963, 1981-82	10-29-82 7-28-83	5.28 2.49
02031500	North Fork Moormans River near White Hall, Va.	Lat 38°08'25", long 78°45'05", Albemarle County, off State Highway 614, 0.2 mi above Charlottesville Reservoir, and 5.0 mi northwest of White Hall.	11.4	1944-46, 1951-63*, 1969, 1981, 1982*	11-29-82 7-28-83	91.9 .58
02033750	Buck Island Creek below Houchins Creek near Simeon, Va.	Lat 37°57'13", long 78°24'15", Albemarle County, 100 ft below bridge on State Highway 729, just below Houchins Creek, and 3.5 mi southeast of Simeon.	-	1981-82	10-29-82 11-29-82 7-28-83	4.99 102 2.13
02034150	Little Byrd Creek near Fife, Va.	Lat 37°45'50", long 78°05'24", Goochland County, at culvert on State Highway 667, 1.8 mi above mouth, and 1.9 mi northwest of Fife.	-	1981-82	10-29-82 7-28-83	5.15 1.30

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		JAMES RIVER BASIN--Continued				
02034300	Little Willis River at Curdsville, Va.	Lat 37°24'38", long 78°27'35", Buckingham County, at bridge on U.S. Highway 15, 0.4 mi southwest of Curdsville, and 1.3 mi above Gills Creek.	7.07	1952-54, 1957, 1963, 1981-82	10-20-82 8- 1-83	1.49 1.36
02035075	Maxey Mill Creek near Ballsville, Va.	Lat 37°31'07", long 78°07'31", Cumberland County, at bridge on State Highway 654, 1.0 mi above mouth, and 3.6 mi northwest of Ballsville.	-	1981-82	9-30-82† 10-20-82 8- 1-83	2.47 2.97 .81
02035460	Big Lickinghole Creek at Rt. 613, near Goochland, Va.	Lat 37°43'52", long 77°57'21", Goochland County, at culvert on State Highway 613, 3.3 mi above Little Lickinghole Creek, and 5.3 mi northwest of Goochland.	-	1981-82	10-29-82 7-28-83	4.95 3.37
02036700	Bernards Creek near Manakin, Va.	Lat 37°33'25", long 77°40'33", Powhatan County, at bridge on State Highway 711, 1.6 mi above mouth, and 3.7 mi southeast of Manakin.	-	1981-82	11- 4-82 8- 3-83	3.15 0
02038730	Fourmile Creek near Richmond Heights, Va.	Lat 37°27'16", long 77°19'55", Henrico County, at culvert on Doran Road, 3.9 mi east of Richmond Heights, and 4.9 mi above mouth.	4.01	1980-82	10-18-82 8- 1-83	1.03 .65
02038780	Johnson Creek near Rivermont, Va.	Lat 37°19'58", long 77°19'37", Chesterfield County, at culvert on State Highway 746, 1.4 mi northwest of Rivermont, and 2.4 mi above mouth.	6.22	1980-82	11-22-82 8- 8-83	1.02 0
02039600	Briery Creek near Rice, Va.	Lat 37°16'49", long 78°21'48", Prince Edward County, at bridge on U.S. Highway 460 (Bus.), 0.9 mi above mouth, and 4.1 mi west of Rice.	-	1944, 1952-54, 1963, 1981-82	10-20-82 8- 1-83	5.58 3.68
02039700	Sandy River near Rice, Va.	Lat 37°16'31", long 78°19'17", Prince Edward County, at bridge on U.S. Highway 460, 1.6 mi west of Rice, and 2.0 mi above confluence with Bush River.	-	1944, 1952-54, 1963, 1981-82	10-20-82 8- 1-83	5.06 1.83
02039800	Angola Creek near Angola, Va.	Lat 37°22'16", long 78°17'15", Cumberland County, at bridge on State Highway 664, 3.2 mi above mouth, and 3.9 mi southwest of Angola.	-	1981-82	9-30-82† 10-20-82 8- 1-83	2.25 1.84 .82
02040500	Flat Creek near Amelia, Va.	Lat 37°23'27", long 78°03'45", Amelia County, at bridge on State Highway 681, 6.0 mi northwest of Amelia.	73.0	1946-48‡, 1952-54, 1963, 1981-82	9-30-82† 10-20-82 8- 3-83	12.9 13.9 3.58
02040900	Little Creek near Denaro, Va.	Lat 37°13'32", long 78°01'10", Nottoway County, at bridge on State Highway 611, 2.3 mi southwest of Denaro, and 3.5 mi above mouth.	-	1981-82	9-30-82† 10-19-82 8- 3-83	1.10 .95 .97
02041150	Winterpock Creek near Winterpock, Va.	Lat 37°21'38", long 77°42'56", Chesterfield County, at culvert on State Highway 664, 1.2 mi north of Winterpock, and 4.1 mi above Surline Branch.	-	1981-82	10-19-82 8- 3-83	.11 0
02041400	Whipponock Creek near Church Road, Va.	Lat 37°11'45", long 77°39'23", Dinwiddie County, at culvert on State Highway 627, 1.3 mi northwest of Church Road.	-	1981-82	10-19-82 8- 3-83	.82 .14
02042050	Franks Branch at Rt. 626, near Colonial Heights, Va.	Lat 37°16'42", long 77°28'35", Chesterfield County, at bridge on State Highway 626, 1.0 mi above mouth, and 2.5 mi west of Colonial Heights.	-	1981-82	11- 4-82 8- 3-83	5.82 .28

‡ Operated as a continuous-record gaging station.
† Not previously published.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		JAMES RIVER BASIN--Continued				
02042140	Powell Creek at Garysville, Va.	Lat 37°14'54", long 77°09'09", Prince George County, at bridge on State Highway 10, 4.7 mi above mouth, and at Garysville.	14.6	1980-82	11-22-82 8- 8-83	4.94 2.87
02042160	West Run at Barnetts, Va.	Lat 37°21'30", long 77°09'56", Charles City County, at culvert on State Highway 625, 1.0 mi above Harrison Lake, and 10 mi southwest of Barnetts.	20.3	1968, 1980-82	10-18-82 8- 1-83	1.73 .59
02042200	Glebe Creek tributary near Charles City, Va.	Lat 37°22'05", long 77°04'15", Charles City County, at culvert on State Highway 155, 0.7 mi above mouth, and 1.6 mi north of Charles City.	.7	1948, 1953-55, 1980-82	10-19-82 8- 1-83	0 0
02042210	Courthouse Creek at Charles City, Va.	Lat 37°20'37", long 77°04'14", Charles City County, at bridge on State Highway 5, 0.8 mi above Parrish Hill Creek, and at Charles City.	9.79	1968, 1980-82	10-19-82 8- 8-83	2.20 2.32
02042450	White Oak Swamp near White Oak Swamp, Va.	Lat 37°29'03", long 77°16'05", Henrico County, at culvert on Poplar Springs Road, 0.1 mi below White Oak Swamp Creek, and 2.0 mi southeast of White Oak Swamp.	8.26	1980-82	8- 1-83	.84
02042600	Rumley Marsh near Providence Forge, Va.	Lat 37°28'32", long 77°02'49", New Kent County, at bridge on forest road, 2.3 mi north of Providence Forge, and 2.5 mi above U.S. Highway 60.	11.9	1981-82	11- 4-82 8- 4-83	10.6 3.03
02042700	Collins Run near Providence Forge, Va.	Lat 37°23'59", long 77°02'54", Charles City County, at culvert on State Highway 155, 2.5 mi above mouth, and 2.9 mi south of Providence Forge.	2.84	1948, 1953-56, 1967, 1980-82	10-19-82 8- 1-83	.046 .57
02042782	Powhattan Creek at Five Forks, Va.	Lat 37°14'57", long 76°46'23", James City County, at bridge on State Highway 5, 2.7 mi north of Jamestown, and 4.3 mi above mouth on Sandy Bay.	19.7	1980-82	10-19-82 5- 5-83 7-14-83 8-25-83	2.98 42.5 .86 .26
02042784	Grays Creek near Surry, Va.	Lat 37°10'06", long 76°51'25", Surry County, at bridge on State Highway 618, 2.0 mi northwest of Surry, and 5.4 mi above mouth.	8.09	1980-82	11-23-82 8- 8-83	1.97 (a)
02042787	Skiffes Creek near Lee Hall, Va.	Lat 37°12'48", long 76°36'50", James City County, at culvert on Plantation Road, 0.9 mi above Skiffes Creek Reservoir, and 3.2 mi northwest of Lee Hall.	1.32	1980-82	10-22-82 5- 5-83 7-14-83 8-25-83	.047 1.57 .57 .10
02042790	Beaverdam Creek near Yorktown, Va.	Lat 37°12'09", long 76°31'16", York County, at bridge on Yorktown Tour Drive, 0.5 mi below confluence of Great Run and Baptist Run, and 2.2 mi south of Yorktown.	5.46	1980-82	10-22-82 7-20-83	.99 2.26
02042794	Cypress Creek near Benns Church, Va.	Lat 36°55'22", long 76°36'15", Isle of Wight County, at bridge on State Highway 620, 1.5 mi southwest of Benns Church, and 5.3 mi above mouth.		1980-82	11-24-82 8-11-83	4.33 .82
02042830	Shingle Creek at Suffolk, Va.	Lat 36°43'16", long 76°34'02", Suffolk City, at culvert on White Marsh Road, 0.4 mi south of Suffolk, and 3.3 mi above mouth.		1979-80, 1982	8-11-83	.24

a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		JAMES RIVER BASIN--Continued				
02042890	Drum Point Creek at Boone, Va.	Lat 36°50'44", long 76°26'03", Chesapeake City, at culvert on Pughsville Road, 0.3 mi north of Boone, and 2.7 mi above mouth.	0.61	1980-82	11-24-82 8-11-83	0.51 0
		CHESAPEAKE BAY				
02042950	Great Neck Creek tributary at Oceana, Va.	Lat 36°50'03", long 76°00'47", Virginia Beach City, at culvert on Oceana Blvd., 0.45 mi above mouth, and 2.0 mi east of London Bridge.	.90	1980-82	11-24-82 8-11-83	.92 .50
		CURRITUCK SOUND				
02043000	Beggars Bridge Creek near Pleasant Ridge, Va.	Lat 36°40'57", long 76°00'37", Virginia Beach City, at culvert on Dawley Road, 1.0 mi southeast of Pleasant Ridge, and 2.2 mi above mouth.	.76	1980-82	11-24-82 8-11-83	.21 0
02043100	Albemarle and Chesapeake Canal tributary near Great Bridge, Va.	Lat 36°41'07", long 76°13'17", Virginia Beach City, at culvert on Etheridge Road, 1.7 mi southeast of Great Bridge, and 2.4 mi above mouth.	3.80	1980-82	11-24-82 8-11-83	3.42 .14
		CHOWAN RIVER BASIN				
02044300	Little Nottoway River near Blackstone, Va.	Lat 37°02'25", long 78°02'07", Nottoway County, at bridge on State Highway 40, 2.2 mi above mouth, and 2.4 mi southwest of Blackstone.	-	1942, 1952-54, 1981-82	10- 1-82 10-19-82 8- 3-83	17.4 17.9 13.9
02045800	White Oak Creek near Hebron, Va.	Lat 37°07'40", long 77°48'54", Dinwiddie County, at bridge on State Highway 620, 1.2 mi southwest of Hebron.	-	1981-82	10- 1-82 10-19-82 8- 3-83	1.33 1.20 .82
02046230	Sappony Creek at Rt. 681, near Stony Creek, Va.	Lat 36°56'36", long 77°27'08", Sussex County, at bridge on State Highway 681, 1.5 mi above mouth, and 2.5 mi west of Stony Creek.	-	1981-82	10- 1-82	6.05
02046300	Hatcher Run near Reams, Va.	Lat 37°07'23", long 77°28'45", Dinwiddie County, at bridge on State Highway 613, 2.1 mi above Arthur Swamp, and 4.3 mi northwest of Reams.	-	1981-82	11- 1-82 7-29-83	14.3 .22
02046370	Rowanty Creek near Stony Creek, Va.	Lat 36°58'57", long 77°22'53", Sussex County, at bridge on State Highway 602, 1.7 mi below Bolling Swamp, and 2.2 mi northeast of Stony Creek.	-	1981-82	11- 1-82 7-27-83	37.1 (a)
02046480	Hunting Quarter Swamp near Sussex, Va.	Lat 36°53'25", long 77°29'54", Sussex County, at culvert on State Highway 735, 1.9 mi south of Sussex.	9.25	1980-82	8-10-83	0
02046500	Anderson Branch at Sussex, Va.	Lat 36°55'10", long 77°15'45", Sussex County, at bridge on State Highway 40, 1.0 mi east of Sussex, and 1.7 mi above mouth.	5.35	1949-56*, 1969, 1980-82	8-10-83	0
02046700	Raccoon Creek near Sebrell, Va.	Lat 36°48'11", long 77°12'28", Southampton County, at bridge on State Highway 608, 3.2 mi above mouth, and 4.6 mi northwest of Sebrell.	65.0	1942, 1952-54, 1978, 1980-82	8-10-83	(a)

* Operated as a continuous-record gaging station.
a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
		CHOWAN RIVER BASIN--Continued				
02046720	Tryall Creek near Smoky Ordinary, Va.	Lat 36°47'03", long 77°39'55", Brunswick County, at bridge on State Highway 607, 1.6 mi above confluence with Cooks Branch, and 5.0 mi southeast of Smoky Ordinary.	-	1981-82	11- 1-82 7-27-83	0.40 0
02046750	Three Creek at Rt. 616, near Emporia, Va.	Lat 36°43'25", long 77°31'13", Greensville County, at bridge on State Highway 616, 1.5 mi below Maelins Creek, and 1.6 mi northeast of Emporia.	67.2	1981-82	11- 1-82 7-29-83	7.88 2.26
02046830	Applewhite Swamp near Drewryville, Va.	Lat 36°43'36", long 77°21'03", Southampton County, at culvert on State Highway 612, 2.6 mi northwest of Drewryville.	5.96	1980-82	8-10-83	0
02047050	Assamoosick Swamp near Homeville, Va.	Lat 36°58'30", long 77°09'11", Sussex County, at bridge on State Highway 40, 2.4 mi northeast of Homeville.	22.0	1980-82	8-10-83	0
02047100	Assamoosick Swamp near Sebrell, Va.	Lat 36°46'22", long 77°05'57", Southampton County, at bridge on State Highway 35, 0.7 mi above Indian Branch, and 1.5 mi southeast of Sebrell.	86.4	1942-43, 1952-54, 1980-81, 1982*	8-10-83	0
02047300	Nottoway Swamp near Story, Va.	Lat 36°43'22", long 76°59'43", Southampton County, at bridge on State Highway 611, 1.6 mi northeast of Story.	12.2	1980-82	8-10-83	0
02047360	Mill Creek near Sunbeam, Va.	Lat 36°34'12", long 77°02'19", Southampton County, at bridge on State Highway 684, 1.2 mi southwest of Sunbeam, and 1.5 mi above Windbourne Millpond.	23.7	1980-82	8-11-83	0
02047400	Blackwater Swamp near Disputanta, Va.	Lat 37°08'02", long 77°12'30", Prince George County, at bridge on State Highway 625, 1.0 mi northeast of Disputanta.	75.6	1942, 1952-53, 1980-82	11-22-82 8- 8-83	26.6 0
02047420	Warwick Swamp near Disputanta, Va.	Lat 37°05'34", long 77°09'08", Sussex County, at bridge on State Highway 613, 0.9 mi above mouth, and 4.5 mi southeast of Disputanta.	38.2	1980-82	11-22-82 8- 8-83	34.6 0
02047440	Otterdam Swamp near Waverly, Va.	Lat 37°04'57", long 77°03'19", Surry County, at culvert on State Highway 40, 1.2 mi above mouth, and 3.2 mi northeast of Waverly.	22.4	1980-82	8- 8-83	0
02047460	Pigeonroost Swamp near Elberon, Va.	Lat 37°06'35", long 76°53'42", Surry County, at culvert on State Highway 618, 2.5 mi north of Elberon.	5.98	1980-82	11-23-82 8- 8-83	2.61 .10
02047480	Cypress Swamp near Dendron, Va.	Lat 37°03'18", long 76°55'15", Surry County, at bridge on State Highway 31, 0.2 mi northeast of Dendron, and 2.8 mi above mouth.	54.4	1980-82	11-23-82	55.8
02047520	Rattlesnake Swamp at Raynor, Va.	Lat 36°57'30", long 76°46'25", Isle of Wight County, at bridge on State Highway 625, 0.9 mi above Mill Swamp, and 0.9 mi northeast of Raynor.	40.3	1980-82	8-10-83	0
02048460	Round Hill Swamp near Berlin, Va.	Lat 36°51'02", long 76°56'21", Southampton County, at bridge on State Highway 614, 1.5 mi above mouth, and 2.2 mi east of Berlin.	25.6	1980-82	8-10-83	0

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
CHOWAN RIVER BASIN--Continued						
02048500	Seacock Swamp at Unity, Va.	Lat 36°49'15", long 76°51'56", Southampton County, at bridge on State Highway 635, 0.7 mi northeast of Unity, and 1.8 mi above mouth.	102	1942-49*, 1952, 1976, 1978, 1980-82	8-10-83	0
02049700	Cypress Swamp near Burdette, Va.	Lat 36°44'29", long 76°56'18", Southampton County, at culvert on State Highway 611, 1.8 mi above mouth, and 3.1 mi southwest of Burdette.	8.55	1950-56, 1968, 1980-82	8-10-83	0
02050115	Chapel Swamp near Somerton, Va.	Lat 36°34'34", long 76°48'28", Suffolk City, at bridge on State Highway 759, 0.5 mi above mouth, and 3.2 mi west of Somerton.	17.9	1980-82	8-11-83	0
02050130	Beaverdam Creek near Cleopus, Va.	Lat 36°33'10", long 76°50'30", Suffolk City, at bridge on State Highway 668, 0.5 mi above mouth, and 2.8 mi south of Cleopus.	8.77	1965-68, 1970, 1980-82	8-11-83	0
02050150	Quaker Swamp near Lummis, Va.	Lat 36°41'42", long 76°43'35", Suffolk City, at culvert on U.S. Highway 58, 1.4 mi west of Lummis.	4.02	1980-82	8-11-83	0
02051100	South Meherrin River near Chase City, Va.	Lat 36°51'34", long 78°25'22", Lunenburg and Mecklenburg Counties, at bridge on State Highway 49, 4.0 mi northeast of Chase City.	-	1944, 1952-54, 1981-82	11- 3-82 7-26-83	5.62 2.23
02051175	Meherrin River near Northview, Va.	Lat 36°48'03", long 78°10'04", Mecklenburg County, at bridge on State Highway 636, 1.2 mi above Crooked Creek, and 4.5 mi northeast of Northview.	-	1982	11- 3-82 8-26-83	84.7 15.7
02051200	Flat Rock Creek near Kenbridge, Va.	Lat 36°53'58", long 78°07'22", Lunenburg County, at bridge on State Highway 647, 2.5 mi southwest of Bishops Corner, and 4.3 mi south of Kenbridge.	-	1952-54, 1981-82	11- 4-82 7-26-83	10.8 6.16
02051300	Evans Creek near Brodnax, Va.	Lat 36°44'07", long 77°57'34", Brunswick County, at bridge on State Highway 623, 0.9 mi above mouth, and 4.0 mi northeast of Brodnax.	-	1981-82	11- 4-82 7-27-83	5.54 2.90
02052100	Rattlesnake Creek near Ankum, Va.	Lat 36°36'48", long 77°52'25", Brunswick County, 100 ft downstream from State Highway 46, 0.4 mi above Houses Creek, and 0.8 mi northeast of Ankum.	-	1981-82	11- 1-82 7-27-83	1.32 .19
02053030	Mill Swamp near Claresville, Va.	Lat 36°36'32", long 77°29'10", Greensville County, at bridge on State Highway 660, 2.2 mi southwest of Claresville, and 3.8 mi above Taylors Millpond.	-	1981-82	11- 1-82 7-29-83	<1 (a)
02053100	Tarrara Creek at Boykins, Va.	Lat 36°35'20", long 77°12'03", Southampton County, at bridge on State Highway 35, 3.7 mi above mouth, and at Boykins.	57.5	1980-82	8-10-83	.15
ROANOKE RIVER BASIN						
02054120	North Fork Roanoke River below Lusters Gate, Va.	Lat 37°13'18", long 80°21'56", Montgomery County, at private road bridge off State Highway 723, 1.4 mi south of Lusters Gate, and 1.4 mi below Indian Run.	-	1969, 1982	12- 7-82 8-15-83	26.5 8.02

* Operated as a continuous-record gaging station.
< Less than.
a Ponded, no apparent flow.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements	
					Date	Discharge (ft³/s)
		ROANOKE RIVER BASIN--Continued				
0205[illegible]650	Mason Creek at Mason Cove, Va.	Lat 37°22'18", long 80°04'02", Roanoke County, at bridge on State Highway 864, at Mason Cove, and 1.9 mi above Jumping Run Creek.	-	-	12- 7-82 8-15-83	6.84 .252
02056700	Beaverdam Creek near Hardy, Va.	Lat 37°13'28", long 79°45'23", Bedford County, at culvert on State Highway 757, 1.1 mi below West Fork, and 3.0 mi east of Hardy.	-	1981-82	10-21-82 8-15-83	4.66 3.33
02056850	Maggodee Creek near Boones Mill, Va.	Lat 37°07'57", long 79°58'20", Franklin County, at bridge on private road, 0.5 mi south of Murray Gap, and 1.6 mi northwest of Boones Mill.	-	1981-82	10-21-82 8- 4-83	3.96 2.63
02057050	Gills Creek at Rt. 122, near Burnt Chimney, Va.	Lat 37°07'31", long 79°46'58", Franklin County, at bridge on State Highway 122, 2.4 mi northeast of Burnt Chimney.	-	1952-54, 1981-82	10-21-82 8- 4-83	5.98 5.54
02057600	Pigg River at Rt. 40, near Rocky Mount, Va.	Lat 36°58'34", long 79°55'32", Franklin County, at bridge on State Highway 40, 1.0 mi west of Rocky Mount, and 1.8 mi above Story Creek.	-	1976, 1981-82	10-20-82 8- 3-83	18.4 21.8
02057750	Little Chesnut Creek near Sydnorsville, Va.	Lat 36°54'07", long 79°50'55", Franklin County, at bridge on State Highway 724, 1.3 mi northeast of Sydnorsville, just below confluence of North and South Forks, and 1.6 mi above mouth.	-	1981-82	10-20-82 8- 4-83	3.78 3.28
02058100	Turkeycock Creek at Sago, Va.	Lat 36°52'53", long 79°37'52", Pittsylvania County, at bridge on State Highway 969, 0.8 mi southeast of Sago, and 3.3 mi above mouth.	-	1953-54, 1981-82	10-19-82 8- 4-83	9.32 7.49
02059400	North Fork Goose Creek near Montvale, Va.	Lat 37°22'14", long 79°41'55", Bedford County, at bridge on U.S. Highway 460, 0.1 mi above junction with South Fork Goose Creek, and 1.7 mi southeast of Montvale.	-	1952-54, 1982	11-19-82 7-29-83	11.3 10.1
02059560	Shockoe Creek near Irving, Va.	Lat 37°18'46", long 79°40'34", Bedford County, at culvert on State Highway 755, 1.0 mi above mouth, and 3.1 mi south of Irving.	-	1981-82	10-21-82 8- 5-83	.87 .44
02060400	Sycamore Creek at Sycamore, Va.	Lat 37°01'25", long 79°21'24", Pittsylvania County, at culvert on State Highway 643, at Sycamore, and 4.0 mi above Little Sycamore Creek.	-	1981-82	10-18-82 8- 1-83	1.04 1.24
02061000	Big Otter River near Bedford, Va.	Lat 37°21'50", long 79°25'10", Bedford County, at bridge on U.S. Highway 221, 4.0 mi northeast of Bedford, and 8.9 mi above Little Otter River.	116	1942, 1944-60*, 1981-82	10-22-82 8-15-83	23.3 10.9
02061200	Little Otter River at Rt. 122, near Bedford, Va.	Lat 37°21'41", long 79°30'03", Bedford County, at bridge on State Highway 122, 0.4 mi north of Bedford.	-	1942, 1952-54, 1978, 1981-82	10-22-82 8- 5-83	5.00 4.08
02062300	Seneca Creek near Long Island, Va.	Lat 37°06'23", long 79°07'22", Campbell County, at bridge on State Highway 633, at Marysville, 1.5 mi above mouth, and 2.6 mi northwest of Long Island.	-	1981-82	10-18-82 8- 1-83	11.6 10.6

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		ROANOKE RIVER BASIN--Continued				
02063400	Reddy Creek near Spring Mills, Va.	Lat 37°16'54", long 78°54'14", Appomattox County, at bridge on State Highway 679, 100 ft above mouth, and 2.3 mi north of Spring Mills.	-	1951-54, 1977, 1981-82	10-18-82 8- 1-83	2.58 2.73
02065220	Catawba Creek at Clarkton, Va.	Lat 36°58'30", long 78°53'45", Halifax County, at bridge on State Highway 626, 0.2 mi above mouth, and 0.8 mi southeast of Clarkton.	-	1981-82	11- 2-82 7-25-83	12.9 14.4
02065400	Big Cub Creek near Madisonville, Va.	Lat 37°12'13", long 78°44'05", Charlotte County, at bridge on State Highway 701, 0.1 mi below Little Cub Creek, and 2.7 mi northwest of Madisonville.	-	1981-82	11- 2-82 7-25-83	15.5 15.9
02066450	Roanoke Creek near Charlotte Court House, Va.	Lat 37°03'27", long 78°35'03", Charlotte County, at bridge on State Highway 40, 0.1 mi below Dunnavant Creek, and 2.0 mi east of Charlotte Court House.	-	1953-54, 1981-82	11- 2-82 8- 1-83	12.2 5.94
02066500	Roanoke Creek at Saxe, Va.	Lat 36°55'49", long 78°39'56", Charlotte County, at bridge on State Highway 612, at Saxe, and 5.0 mi above mouth.	135	1942-43, 1946-72*, 1981-82	11- 3-82 7-26-83	18.0 16.8
02067100	Difficult Creek near Scottsburg, Va.	Lat 36°47'46", long 78°47'10", Halifax County, at bridge on U.S. Highway 360, 2.5 mi above Piney Creek, and 2.6 mi north of Scottsburg.	-	1981-82	11- 3-82 7-26-83	14.4 12.5
02069550	North Fork South Mayo River at Stuart, Va.	Lat 36°39'03", long 80°17'08", Patrick County, at bridge on U.S. Highway 58, 0.5 mi northwest of Stuart, and 1.5 mi above mouth.	-	1953-54, 1981-82	10-20-82 8- 3-83	6.42 8.42
02069800	Grassy Branch near Sanville, Va.	Lat 36°42'03", long 80°05'48", Patrick County, at culvert on State Highway 721, 0.3 mi above mouth, and 2.5 mi southwest of Sanville.	-	1981-82	10-20-82 8- 3-83	1.72 1.70
02071600	Smith River near Charity, Va.	Lat 36°48'18", long 80°12'04", Patrick County, at bridge on State Highway 704, 0.9 mi above Joint Crack Creek, and 1.4 mi southeast of Charity.	-	1981-82	10-20-82 8- 3-83	42.8 71.4
02071800	Nicholas Creek near Ferrum, Va.	Lat 36°52'11", long 80°03'10", Franklin County, at bridge on State Highway 605, 3.1 mi above Philpott Reservoir, and 4.1 mi southwest of Ferrum.	12.2	1949, 1951, 1953, 1955-64, 1969, 1971, 1981-82	10-20-82 8- 3-83	3.99 7.46
02072600	Reed Creek near Collinsville, Va.	Lat 36°45'17", long 79°54'48", Henry County, at bridge on State Highway 669, 1.0 mi north of Collinsville, and 2.9 mi above mouth.	-	1981-82	10-19-82 8- 3-83	3.10 3.92
02073500	Leatherwood Creek near Martinsville, Va.	Lat 36°38'10", long 79°47'30", Henry County, at bridge on State Highway 650, 1.7 mi above mouth, and 2.5 mi southeast of Martinsville.	68	1926-34*, 1953-54, 1981-82	10-19-82 8- 4-83	16.6 20.6
02074450	Sandy River near Swansonville, Va.	Lat 36°44'23", long 79°36'54", Pittsylvania County, at bridge on State Highway 612, 0.1 mi below West Fork, and 2.0 mi west of Swansonville.	-	1981-82	10-19-82 8- 4-83	7.07 6.98

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		ROANOKE RIVER BASIN--Continued				
02075020	Fall Creek near Danville, Va.	Lat 36°40'42", long 79°24'13", Pittsylvania County, at bridge on State Highway 744, 2.4 mi north of Danville, and 2.8 mi above Edward Creek.	-	1981-82	10-19-82 8- 4-83	0.76 .61
02075275	Sandy Creek near Ringgold, Va.	Lat 36°34'50", long 79°13'31", Pittsylvania County, at bridge on U.S. Highway 58, 1.2 mi above mouth, and 4.6 mi southeast of Ringgold.	-	1942, 1981-82	11- 2-82 7-25-83	5.55 6.16
02075600	Birch Creek near Birch, Va.	Lat 36°42'12", long 79°13'03", Pittsylvania County, at bridge on State Highway 729, 1.2 mi below Gunther Branch, and 3.0 mi southwest of Birch.	-	1981-82	11- 2-82 7-25-83	8.30 6.91
02075900	Lawsons Creek near Turbeville, Va.	Lat 36°36'39", long 79°01'28", Halifax County, at culvert on State Highway 658, 0.7 mi below Long Branch, and 1.2 mi southeast of Turbeville.	8.7	1950-64, 1968, 1970-71 1981-82	11- 2-82 7-25-83	2.27 1.73
02076300	Banister River at U.S. Highway 29, near Chatham, Va.	Lat 36°46'41", long 79°23'33", Pittsylvania County, at bridge on U.S. Highway 29, 1.6 mi below White Oak Creek, and 1.8 mi south of Chatham.	-	1942, 1953-54, 1981-82	10-19-82 8- 1-83	24.3 4.85
02076650	Banister River near Mount Airy, Va.	Lat 36°54'39", long 79°11'00", Pittsylvania County, at bridge on State Highway 640, 2.2 mi south of Mount Airy.	-	1942, 1953-54, 1981-82	11- 2-82 7-25-83	106 99.3
02076770	Sandy Creek at Meadville, Va.	Lat 36°49'32", long 79°01'39", Halifax County, at bridge on State Highway 832, 0.2 mi above mouth, and 0.7 mi south of Meadville.	-	1953-54, 1981-82	11- 3-82 7-26-83	21.2 32.8
02078300	Aarons Creek near Nelson, Va.	Lat 36°35'12", long 78°43'00", Halifax and Mecklenburg Counties, at bridge on State Highway 604, 1.7 mi northwest of Nelson.	-	1981-82	11- 3-82 7-26-83	11.5 1.38
02078400	Bluestone Creek at Rt. 699, near Laconia, Va.	Lat 36°43'48", long 78°36'58", Mecklenburg County, at bridge on State Highway 699, 1.2 mi east of Laconia, and 3.4 mi south of Red Oak.	-	1981-82	11- 3-82 7-26-83	12.8 3.84
02079660	Jolly Hollow Branch at Boydton, Va.	Lat 36°40'38", long 78°23'13", Mecklenburg County, at bridge on State Highway 92, 0.3 mi north of Boydton, and 0.4 mi above Whetstone Branch.	3.60	1944-54, 1960, 1981-82	11- 4-82 7-27-83	.64 .41
02079665	Cox Creek at Baskerville, Va.	Lat 36°40'58", long 78°16'15", Mecklenburg County, at bridge on State Highway 669, 0.5 mi southeast of Baskerville.	-	1981-82	11- 4-82 7-27-83	4.47 1.83
02079740	Great Creek near Marengo, Va.	Lat 36°36'22", long 78°05'05", Mecklenburg County, at bridge on State Highway 620, 0.7 mi above Hagood Creek, and 2.8 mi southeast of Marengo.	-	1981-82	11- 4-82 7-27-83	3.04 1.76
		YADKIN RIVER BASIN				
02113550	Ararat River near Ararat, Va.	Lat 36°34'07", long 80°33'03", Patrick County, at bridge on State Highway 749, 1.6 mi upstream from VA-NC stateline, and 3.0 mi southwest of Ararat.	-	1981-82	10-20-82 8- 3-83	14.2 18.0

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		KANAWHA RIVER BASIN				
03162415	Helton Creek near Whitetop, Va.	Lat 36°36'33", long 81°33'52", Grayson County, at bridge on U.S. Highway 58, 2.0 mi above Middle Fork, and 3.2 mi northeast of Whitetop.	-	-	10-18-82 8-18-83	9.78 1.71
03162750	Wilson Creek at Volney, Va.	Lat 36°37'20", long 81°23'36", Grayson County, at bridge on U.S. Highway 58, 0.4 mi southwest of Volney.	-	-	10-18-82 8-18-83	10.7 3.26
03163500	Elk Creek at Mt. Carmel Church, near Galax, Va.	Lat 35°41'53", long 80°03'26", Grayson County, along State Highway 650, at Mt. Carmel Church, 2.9 mi above mouth, and 10 mi northwest of Galax.	-	1982	12- 9-82 8-19-83	84.3 19.0
03165350	Brush Creek near Ivanhoe, Va.	Lat 36°45'59", long 80°59'05", Carroll County, at bridge on State Highway 94, 3.2 mi above mouth, and 5.0 mi southwest of Ivanhoe.	-	1982	12- 9-82 8-17-83	19.0 1.13
03165750	Blue Springs Creek near Cedar Springs, Va.	Lat 36°48'14", long 81°18'22", Smyth County, at bridge on State Highway 675, 0.3 mi below Dry Creek, and 1.8 mi southwest of Cedar Springs.	-	-	10-19-82 8-18-83	3.09 2.92
03166600	Stony Fork near Favonia, Va.	Lat 37°00'30", long 81°11'27", Wythe County, at bridge on U.S. Highway 52, 300 ft above East Fork, and 3.1 mi north of Favonia.	-	-	10-19-82 12- 9-82 8-17-83	1.33 5.85 .008
03167200	Laurel Fork near Laurel Fork, Va.	Lat 36°44'34", long 80°31'49", Carroll County, at bridge on State Highway 638, 1.8 mi northwest of Laurel Fork, and 5.8 mi above mouth.	-	1982	12- 8-82 8-16-83	40.4 25.9
03167700	Beaverdam Creek at Hillsville, Va.	Lat 36°45'45", long 80°43'42", Carroll County, at culvert on U.S. Highway 58, at Hillsville, and 2.9 mi above mouth.	4.13	1952-55, 1982	12- 8-82 8-16-83	5.28 3.64
03168750	Thorne Springs Branch near Dublin, Va.	Lat 37°05'30", long 80°44'34", Pulaski County, at culvert on U.S. Highway 11, 2.8 mi west of Dublin, and 3.7 mi above mouth.	4.77	1957-70*, 1978, 1982	12- 8-82 8-16-83	.45 .66
03169150	Pine Creek near Floyd, Va.	Lat 37°57'03", long 80°17'03", Floyd County, at bridge on State Highway 682, 0.6 mi above mouth, and 2.8 mi northeast of Floyd.	-	1982	12- 8-82 8-16-83	9.74 6.42
03169370	Brush Creek near Riner, Va.	Lat 37°01'57", long 80°23'49", Montgomery County, at bridge on State Highway 616, 2.2 mi above mouth, and 3.3 mi southeast of Riner.	-	1982	12- 8-82 8-16-83	8.74 1.52
03171400	Neck Creek near Belspring, Va.	Lat 37°11'03", long 80°37'24", Pulaski County, at culvert on State Highway 617, 0.9 mi southwest of Belspring, and 1.5 mi above mouth.	-	1982	12- 8-82 8-16-83	2.69 3.03
03171550	Sinking Creek near Newport, Va.	Lat 37°18'40", long 80°30'55", Giles County, at bridge on State Highway 700, 1.6 mi northwest of Newport, and 6.9 mi above mouth.	-	1942, 1952-55, 1982	12- 7-82 8-16-83	65.3 27.9
03171900	Kimberling Creek near Holly Brook, Va.	Lat 37°10'38", long 80°58'54", Bland County, at bridge on State Highway 612, 0.5 mi above East Wilderness Creek, and 1.8 mi southwest of Holly Brook.	-	-	10-19-82 12- 9-82 8-17-83	1.31 9.95 .20

* Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
KANAWHA RIVER BASIN--Continued						
03177600	Bluestone River above Bluestone, Va.	Lat 37°13'57", long 81°18'00", Tazewell County, at private road bridge off State Highway 720, 0.2 mi west of Bluestone.	-	-	10-19-82 12- 9-82 8-17-83	7.97 16.5 8.26
BIG SANDY RIVER BASIN						
03213590	Knox Creek at Kelsa, Va.	Lat 37°27'02", long 82°03'34", Buchanan County, on left bank at bridge on State Highway 697, 0.3 mi below Pawpaw Creek, and 0.8 mi northeast of Kelsa.	84.3	1980-81‡	10-22-82 8-16-83	15.3 3.81
TENNESSEE RIVER BASIN						
03474000	Middle Fork Holston River at Seven Mile Ford, Va.	Lat 36°48'26", long 81°37'20", Smyth County, on right bank at downstream side of bridge on U.S. Highway 11, at Seven Mile Ford, and 0.3 mi above Meade Creek.	132	1942-81‡	10-20-82 12- 9-82 8-19-83	61.3 120 52.1
03475700	Spring Creek near Abingdon, Va.	Lat 36°40'43", long 82°02'29", Washington County, at culvert on U.S. Highway 11, 3.8 mi southwest of Abingdon.	2.99	1969	4-16-69†, 10-18-82 12-10-82 8-19-83	3.29 2.86 4.38 1.52
03488450	Brumley Creek at Brumley Gap, Va.	Lat 36°47'30", long 82°01'10", Washington County, on left bank 20 ft downstream from bridge on State Highway 611, 0.2 mi above mouth, and 0.8 mi southeast of Brumley Gap.	21.1	1979-81‡	10-19-82 12- 9-82 8-19-83	19.2 35.0 3.48
03489870	Big Moccasin Creek at Collinwood, Va.	Lat 36°41'16", long 82°19'25", Russell County, at left downstream side of bridge on State Highway 612, 50 ft below Meade Branch, and at Collinwood.	41.9	1944, 1954, 1966-68‡, 1973	10-20-82 12- 9-82 8-18-83	16.5 33.7 8.37
03489900	Big Moccasin Creek near Gate City, Va.	Lat 36°38'47", long 82°33'12", Scott County, on left bank at downstream side of bridge on State Highway 71, 0.2 mi below Franklin Branch, and 1.6 mi east of Gate City.	79.6	1953-59‡	10-20-82 12- 9-82 8-18-83	36.6 82.2 18.8
03521950	Maiden Spring Creek near Thompson Valley, Va.	Lat 37°03'28", long 81°31'26", Tazewell County, at bridge on State Highway 16, 1.7 mi southeast of Thompson Valley.	17.8	1947, 1952-55	10-19-82 8-18-83	9.33 6.81
03522000	Little River at Wardell, Va.	Lat 37°02'16", long 81°47'52", Tazewell County, at bridge on U.S. Highway 19, 0.5 mi below Indian Creek, and 0.5 mi northwest of Wardell.	103	1949-52‡	10-19-82 12- 9-82 8-19-83	56.0 135 29.6
03523000	Big Cedar Creek near Lebanon, Va.	Lat 36°54'29", long 82°02'20", Russell County, on right bank 200 ft above U.S. Highway 19, 0.8 mi west of Lebanon, and 7.2 mi above mouth.	51.5	1952, 1953-59‡, 1980	10-19-82 12- 9-82 8-19-83	32.5 57.1 13.8
03524500	Guest River at Coeburn, Va.	Lat 36°55'45", long 82°27'23", Wise County, on right bank 30 ft downstream from bridge on State Highway 72, 1.0 mi southeast of Coeburn, and 6.3 mi above mouth.	87.3	1949-59‡, 1979-81‡	10-19-82 12- 9-82 8-18-83	36.0 129 23.7
03524900	Stony Creek at Ka, Va.	Lat 36°48'57", long 82°37'02", Scott County, on left bank on State Highway 619, 0.1 mi downstream from Straight Fork, and at Ka.	30.9	1980-81‡	10-20-82 12- 9-82 8-18-83	12.7 61.2 2.40

‡ Operated as a continuous-record gaging station.
† Not previously published.

Discharge measurements made at low-flow partial-record stations during water year 1983--Continued

Station No.	Station Name	Location	Drainage area (mi²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
TENNESSEE RIVER BASIN--Continued						
03526000	Copper Creek near Gate City, Va.	Lat 36°40'26", long 82°33'57", Scott County, on right bank at upstream side of bridge on State Highway 619, 2.6 mi northeast of Gate City.	106	1948-72‡	10-20-82 12- 9-82 8-18-83	41.0 99.3 35.1

‡ Operated as a continuous-record gaging station.

Special study and miscellaneous sites

Discharge measurements in the following table were made at special study and miscellaneous sites throughout the State. Data for miscellaneous sites furnished by the Virginia State Water Control Board are noted by an "a/". Data collected as part of a special study on the hydrology of the Shenandoah National Park are noted by a "b/".

Discharge measurements made at special study and miscellaneous sites during water year 1983

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		NASSAWADOX CREEK BASIN				
Nassawadox Creek a/	Chesapeake Bay	Lat 37°31'31", long 75°52'37", Northampton County, at culvert on State Highway 606, 2.7 mi upstream from Kelly Cove, and 3.5 mi north of Nassawadox.	c4.2	1968-82	1- 5-83 4- 6-83 7-13-83	*6.98 12 *.67
		POTOMAC RIVER BASIN				
Muddy Creek a/	Dry River	Lat 38°27'53", long 78°58'34", Rockingham County, at bridge on State Highway 752, 0.2 mi southwest of Hinton.	-	1979, 1981	9-20-83	*3.32
01626000 South River	South Fork Shenandoah River	Lat 38°03'27", long 78°54'30", Waynesboro City, at bridge on State Highway 664, at Waynesboro.	127	1953-82‡	9- 9-83	35.6
01626850 South River	South Fork Shenandoah River	Lat 38°05'19", long 78°52'38", Augusta County, at bridge on Hopeman Parkway, 1.1 mi below Steele Run, and 1.6 mi southwest of Dooms.	149	1953-82‡	9- 8-83	56.2
01626900 Sawmill Run b/	South River	Lat 38°05'46", long 78°48'38", Augusta County, at bridge on on State Highway 611, 2.7 mi southeast of Dooms, and 3.3 mi above mouth.	3.62	1981-82	10-27-82 11-30-82 1- 4-83 1-31-83 2-28-83 4- 6-83 5-10-83 7-13-83 8- 8-83 9-26-83	1.02 16.9 1.59 3.04 10.1 14.4 2.58 .20 .018 .044
South River	South Fork Shenandoah River	Lat 38°09'22", long 78°51'37", Augusta County, at bridge on State Highway 612, 0.6 mi west of Crimora.	-	1979, 1982	9- 8-83 9- 8-83	61.0 62.1
01627100 Meadow Run b/	South River	Lat 38°09'29", long 78°48'38", Augusta County, at side of Riprap Trail, 500 ft above Shenandoah National Park boundary, and 1.7 mi east of Crimora.	3.45	1981-82	10-27-82 11-30-82 1- 4-83 1-31-83 2-28-83 4- 6-83 5-10-83 7-13-83 8- 8-83 9-26-83	1.16 14.8 1.92 2.45 8.58 16.7 2.98 1.43 .41 .21
Paine Run b/	South River	Lat 38°12'18", long 78°45'35", Augusta County, along Paine Run Road at about 1,720 ft elevation, 4.1 mi east of Harriston.	1.18	-	9- 2-83	d.031
Paine Run b/	South River	Lat 38°11'50", long 78°46'06", Augusta County, along Paine Run Road at about 1,585 ft elevation, 3.8 mi east of Harriston.	1.84	-	9- 2-83	e.139

* Base flow.
‡ Operated as a continuous-record gaging station.
a Furnished by Virginia State Water Control Board.
b Hydrology of the Shenandoah National Park.
c Approximately.
d Streambed dry several places above and below this site.
e Streambed dry 100 ft below measuring site.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

POTOMAC RIVER BASIN--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
Paine Run b/	South River	Lat 38°11'39", long 78°46'53", Augusta County, along Paine Run Road at about 1,500 ft elevation, 3.3 mi southeast of Harriston.	3.26	-	9- 2-83	0.200
Paine Run b/	South River	Lat 38°11'38", long 78°47'01", Augusta County, along Paine Run Road at about 1,480 ft elevation, 3.2 mi southeast of Harriston.	3.65	-	9- 2-83	.266
Paine Run b/	South River	Lat 38°11'43", long 78°47'16", Augusta County, 25 ft below ford on Paine Run Road, 2.9 mi southeast of Harriston.	3.74	-	9- 2-83	.223
01627400 Paine Run b/	South River	Lat 38°11'55", long 78°47'38", Augusta County, 100 ft below ford on State Highway 614, 2.5 mi southeast of Harriston, and 2.7 mi above mouth.	4.92	1981-82	10-27-82 11-30-82 1- 4-83 1-31-83 2-28-83 4- 6-83 5-10-83 7-13-83 8- 8-83 9- 2-83 9-26-83	1.61 22.4 2.04 4.33 11.3 17.6 3.62 .61 .099 .274 .049
Paine Run b/	South River	Lat 38°12'06", long 78°48'10", Augusta County, 0.5 mi below bridge on State Highways 614 and 611, 2.0 mi southeast of Harriston.	5.06	-	9- 2-83	d.081
01627500 South River	South Fork Shenandoah River	Lat 38°13'07", long 78°50'13", Augusta County, at bridge on State Highway 778, 0.3 mi northwest of Harriston.	212	1925-51‡, 1969-82‡	9- 9-83 9- 9-83	67.8 68.3
South River a/	South Fork Shenandoah River	Lat 38°15'33", long 78°49'52", Augusta County, at bridge on State Highway 844, at Grottoes.	-	-	9-20-83	*70.2
South Fork Shenandoah River	Shenandoah River	Lat 38°21'12", long 78°41'59", Rockingham County, at bridge on State Highway 649, 0.5 mi west of Island Ford, and 2.2 mi southeast of McGaheysville.	-	1979	9-11-83 9-12-83	270 273
01628700 Twomile Run b/	South Fork Shenandoah River	Lat 38°20'04", long 78°40'20", Rockingham County, 200 ft downstream from Shenandoah National Park boundary, 2.1 mi above mouth, and 4.1 mi southeast of McGaheysville.	2.17	1981-82	10-27-82 11-30-82 1- 4-83 2- 2-83 2-28-83 4- 6-83 5-10-83 7-13-83 8- 8-83 9-26-83	.34 2.81 .75 2.04 5.38 7.84 1.35 .15 .085 .051
South Fork Shenandoah River a/	Shenandoah River	Lat 38°23'15", long 78°38'40", Rockingham County, 1.7 mi southwest of Elkton, 2.6 mi upstream from bridge on U.S. Highway 33 bypass.	-	1964-65, 1967, 1977	8- 6-64† 8-17-64† 8-26-64† 9- 2-64† 12- 2-64† 12- 2-64† 12-29-64† 7-25-67† 6-28-77† 7-20-77† 9- 7-83	*251 *215 *188 *277 538 508 1,000 *338 *273 *186 *339

* Base flow.
† Not previously published.
‡ Operated as a continuous-record gaging station.
a Furnished by Virginia State Water Control Board.
b Hydrology in the Shenandoah National Park.
d Streambed dry several places above and below this site.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		POTOMAC RIVER BASIN--Continued				
01628900 Unnamed tributary a/	Hawksbill Creek	Lat 38°20'47", long 78°34'35", Rockingham County, at side of State Highway 626, 1.5 mi south of Swift Run, and 2.0 mi above mouth.	1.32	1981-82	10-27-82	0.33
					11-30-82	1.54
					1- 6-83	.054
					2- 2-83	3.19
					2-28-83	2.41
					4- 6-83	4.67
					5-12-83	.93
					7-13-83	.15
					8- 9-83	.10
					9-27-83	.098
Bear Lithia Spring a/	South Fork Shenandoah River	Lat 38°26'10", long 78°37'10", Rockingham County, 0.7 mi above confluence with South Fork Shenandoah River, 1.9 mi north of Elkton.	-	1979	9-20-83	*1.40
Quail Run a/	South Fork Shenandoah River	Lat 38°24'19", long 78°42'10", Rockingham County, 0.2 mi upstream from bridge on State Highway 646, 2.7 mi northeast of McGaheysville, and 4.4 mi above confluence with Boone Run.	-	-	9-20-83	*.077
01629120 East Branch Naked Creek b/	Naked Creek	Lat 38°28'07", long 78°29'50", Page County, at side of road, 1.6 mi east of Jollett, and 1.7 mi above mouth.	4.58	1981-82	10-27-82	2.15
					11-30-82	12.4
					1- 6-83	3.18
					2- 2-83	5.60
					2-28-83	10.6
					4- 6-83	22.8
					5-12-83	4.69
					7-13-83	.94
					8- 9-83	.45
					9-27-83	.21
01629275 South Fork Shenandoah River	Shenandoah River	Lat 38°28'54", long 78°37'40", Page-Rockingham County line, at bridge on State Highway 602, at Shenandoah.	-	1979	9-12-83	318
					9-13-83	327
South Fork Shenandoah River	Shenandoah River	Lat 38°32'02", long 78°36'42", Page County, at bridge on U.S. Highway 340, 0.3 mi north of Grove Hill, and 2.5 mi north of Shenandoah.	-	-	9- 7-83	334
					9-13-83	376
South Fork Shenandoah River a/	Shenandoah River	Lat 38°35'18", long 78°34'00", Page County, at bridge on U.S. Highway 340, 0.5 mi west of Alma.	-	-	9-21-83	*327
01629920 Unnamed tributary b/	Little Hawksbill Creek	Lat 38°33'23", long 78°25'55", Page County, 200 ft above culvert on State Highway 611, 0.5 mi above mouth, and 2.0 mi south of Ida.	.78	1981-82	10-28-82	.61
					11-30-82	1.98
					1- 4-83	.40
					2- 1-83	.78
					2-28-83	1.60
					4- 6-83	4.01
					5-11-83	.91
					7-13-83	.24
					8- 9-83	.092
					9-26-83	.051
South Fork Shenandoah River	Shenandoah River	Lat 38°42'04", long 78°29'33", Page County, 500 ft above Bixler Bridge on State Highway 675, 2.3 mi northwest of Luray.		1979	9-11-83	396
01630542 Pass Run b/	South Fork Shenandoah River	Lat 38°39'05", long 78°21'14", Page County, at bridge on State Highway 669, 1.8 mi west of Thornton Gap, and 2.5 mi above Rocky Branch.	2.00	1981-82	10-27-82	1.26
					11-30-82	3.27
					1- 4-83	1.34
					2- 1-83	2.03
					2-28-83	6.27
					4- 6-83	12.3
					5-11-83	3.66
					7-13-83	1.14
					8- 8-83	.35
					9-26-83	.15

* Base flow.
a Furnished by Virginia State Water Control Board.
b Hydrology in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued				
Jeremys Run b/	South Fork Shenandoah River	Lat 38°45'32", long 78°18'06", Page County, 300 ft below unnamed trail to water wells, 4.8 mi east of Rileyville.	0.52	-	9- 1-83	0.088
Unnamed tributary b/	Jeremys Run	Lat 38°44'52", long 78°19'09", Page County, at about 1,880 ft elevation along Jeremys Run Trail, 4.3 mi southeast of Rileyville.	.70	-	9- 1-83	f.018
Jeremys Run b/	South Fork Shenandoah River	Lat 38°44'53", long 78°19'12", Page County, at about 1,870 ft elevation along Jeremys Run Trail, 4.2 mi southeast of Rileyville.	2.00	-	9- 1-83	.157
Jeremys Run b/	South Fork Shenandoah River	Lat 38°44'34", long 78°19'41", Page County, at about 1,740 ft elevation along Jeremys Run Trail, 3.9 mi southeast of Rileyville.	2.48	-	9- 1-83	.196
Jeremys Run b/	South Fork Shenandoah River	Lat 38°43'42", long 78°20'09", Page County, at about 1,490 ft elevation along Jeremys Run Trail, 4.3 mi southeast of Rileyville.	3.62	-	9- 1-83	.115
Jeremys Run b/	South Fork Shenandoah River	Lat 38°42'56", long 78°20'30", Page County, at about 1,280 ft elevation along Jeremys Run Trail, 4.0 mi northwest of Thornton Gap.	4.79	-	9- 1-83	.129
Jeremys Run b/	South Fork Shenandoah River	Lat 38°42'42", long 78°21'35", Page County, at about 1,140 ft elevation along Jeremys Run Trail, 4.2 mi northwest of Thornton Gap.	7.10	-	9- 1-83	.035
Jeremys Run b/	South Fork Shenandoah River	Lat 38°42'43", long 78°22'20", Page County, at about 1,020 ft elevation along Jeremys Run Trail, 3.7 mi south of Rileyville.	7.91	-	9- 1-83	.107
Jeremys Run b/	South Fork Shenandoah River	Lat 38°42'58", long 78°22'58", Page County, 150 ft above farm road ford, 0.4 mi above State Highway 611 bridge, and 3.2 mi south of Rileyville.	9.63	-	9- 1-83	.137
Jeremys Run b/	South Fork Shenandoah River	Lat 38°43'04", long 78°23'00", Page County, 400 ft below farm road ford, 0.3 mi above State Highway 611 bridge, and 3.1 mi south of Rileyville.	9.65	-	9- 1-83	.082
01630585 Jeremys Run b/	South Fork Shenandoah	Lat 38°43'18", long 78°23'15", Page County, at bridge on State Highway 611, 1.6 mi southeast of Oak Hill, and 3.8 mi above mouth.	9.72	1981-82	10-27-82 11-30-82 1- 4-83 2- 1-83 3- 1-83 4- 6-83 5-11-83 7-13-83 8- 8-83 9-26-83	3.46 9.04 2.49 4.29 19.5 31.9 5.17 .27 .0099 0
01630620 Overall Run	South Fork Shenandoah River	Lat 38°48'18", long 78°20'34", Page County, 0.4 mi above mouth, 2.2 mi southwest of Bentonville.	-	1982	10-27-82 11-30-82 1- 4-83 2- 1-83 3- 1-83 4- 6-83 5-11-83 7-13-83 8- 8-83 9-26-83	2.63 6.02 1.00 1.61 7.84 11.2 2.71 .40 .43 .094

b Hydrology in the Shenandoah National Park.
f Channel dry 30 ft above and below measuring site.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued				
South Fork Shenandoah River	Shenandoah River	Lat 38°49'55", long 78°20'45", Warren County, at Hazard Mill recreation area, 1.5 mi west of Bentonville, and 2.7 mi upstream from bridge on State Highway 613.	-	-	9-14-83	537
01630649 Phils Arm Run b/	Gooney Run	Lat 38°47'34", long 78°14'29", Warren County, 1,200 ft above State Highway 631, 0.3 mi south of Browntown.	0.98	1981-82	10-27-82	.58
					11-30-82	1.92
					1- 4-83	.52
					2- 1-83	.71
					3- 1-83	2.48
					4- 6-83	4.19
					5-11-83	1.35
					7-13-83	.25
					8- 8-83	.11
					9-26-83	.016
01630680 Lands Run b/	Gooney Run	Lat 38°49'20", long 78°12'22", Warren County, at Shenandoah National Park boundary, 1.6 mi northeast of Browntown, and 2.0 mi above mouth.	1.38	1981-82	10-27-82	.41
					11-30-82	.96
					1- 4-83	.56
					2- 1-83	.84
					3- 1-83	5.15
					4- 6-83	8.00
					5-11-83	1.92
					7-13-83	.44
					8- 8-83	.20
					9-26-83	.083
Linville Creek a/	North Fork Shenandoah River	Lat 38°36'54", long 78°48'02", Rockingham County, at Broadway, 0.2 mi downstream from bridge on State Highway 1414, and 0.5 mi above mouth.	-	-	9-20-83	*7.60
North Fork Shenandoah River a/	Shenandoah River	Lat 38°37'15", long 78°47'30", Rockingham County, at Broadway, 0.2 mi downstream from Linville Creek, and 0.5 mi downstream from bridge on State Highway 617.	-	-	9-20-83	*10.2
Unnamed tributary	Stony Creek	Lat 38°53'44", long 78°40'03", Shenandoah County, at mouth, 2.5 mi northeast of Liberty Furnace.	.79	1982	11-16-82	.17
					7-26-83	.11
Meadow Brook a/	Cedar Creek	Lat 39°01'20", long 78°18'26", Frederick County, at bridge on State Highway 624, 0.1 mi west of intersection with State Highway 727, and 1.7 mi west of Middletown.	-	-	9-21-83	*3.55
01636210 Happy Creek b/	Shenandoah River	Lat 38°54'20", long 78°11'10", Warren County, at bridge on Kerfoot Avenue, at Front Royal, 2.3 mi above Leach Run, and 2.9 mi above mouth.	14.0	1948-77‡, 1981-82	10-27-82	5.15
					11-30-82	10.1
					1- 4-83	3.14
					1-31-83	5.27
					3- 1-83	22.8
					4- 6-83	49.5
					5-10-83	18.2
					7-14-83	1.56
					8- 8-83	.98
					9-26-83	.30
Stephens Run a/	Crooked Run	Lat 39°04'31", long 78°13'06", Frederick County, 0.1 mi downstream from bridge on State Highway 1012, 0.6 mi south of Stephens City.	-	-	9-21-83	*.31
Crooked Run a/	Shenandoah River	Lat 38°57'23", long 78°11'06", Warren County, 0.1 mi downstream from U.S. Highway 66, 0.1 mi above mouth, and 1.1 mi northeast of Riverton.	-	-	9-21-83	*3.32

* Base flow.
‡ Operated as a continuous-record gaging station.
a Furnished by Virginia State Water Control Board.
b Hydrology in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft³/s)
		POTOMAC RIVER BASIN--Continued				
Shenandoah River	Potomac River	Lat 38°57'29", long 78°07'20", Warren County, 200 ft below low-water bridge (Morgan Ford) on State Highway 624, 2.4 mi southeast of Rockland, and 4.3 mi northwest of Linden.	-	1979	9- 7-83	590
01636290 Shenandoah River	Potomac River	Lat 39°02'28", long 77°57'52", Clarke County, 100 ft below bridge on U.S. Highways 17 and 50, at Berrys, and 3.5 mi southeast of Millwood.	2,800	-	9- 8-83	545
Shenandoah River	Potomac River	Lat 39°07'27", long 77°53'30", Clarke County, 1,000 ft above bridge on State Highway 7, 4.8 mi southeast of Berryville.	2,930	1963, 1979	9- 8-83	563
Shenandoah River	Potomac River	Lat 39°15'14", long 77°49'00", Jefferson County, West Virginia, 400 ft above West Virginia Highway 9, 2.8 mi southeast of Charles Town, West Virginia.	-	-	9-12-83	597
01644005 Black Branch	Goose Creek	Lat 39°00'27", long 77°34'39", Loudoun County, just above unnamed tributary, 0.7 mi above mouth, and 1.3 mi northeast of Watson.	.71	-	4- 8-83	1.90
					4-17-83	1.09
					4-26-83	.94
					5- 1-83	.37
					5- 8-83	.13
					5-22-83	3.19
					6- 4-83	.049
					6-12-83	.064
					6-26-83	0
					7- 3-83	.016
					7-12-83	.001
					7-28-83	0
					8-21-83	0
					9- 5-83	0
					9-21-83	0
01644010 Unnamed tributary	Black Branch	Lat 39°00'30", long 77°34'40", Loudoun County, at mouth, 1.3 mi northeast of Watson.	.15	-	4- 8-83	.30
					4-17-83	.57
					4-26-83	.46
					5- 1-83	.23
					5- 8-83	.11
					5-22-83	.37
					6- 4-83	.11
					6-12-83	.087
					6-26-83	.094
					7- 3-83	.056
					7-12-83	.018
					7-28-83	.005
					8-21-83	.009
					9- 5-83	.006
					9-21-83	.007
01644020 Unnamed tributary	Black Branch	Lat 39°00'44", long 77°34'45", Loudoun County, at mouth, 1.5 mi northeast of Watson.	.18	-	4- 9-83	.32
					4-17-83	.67
					5- 1-83	.37
					5- 8-83	.26
					5-22-83	.41
					6- 4-83	.17
					6-13-83	.079
					6-26-83	.075
					7-29-83	.015
					8-26-83	.015
					9- 5-83	.013
					9-21-83	.013
01644025 Black Branch	Goose Creek	Lat 39°01'04", long 77°34'39", Loudoun County, at mouth, at Evergreen Mills, and 1.9 mi northeast of Watson.	1.26	-	4- 9-83	2.59
					4-17-83	2.53
					5- 8-83	.61
					5-22-83	4.23
					6- 4-83	.41
					6-13-83	.16
					6-26-83	.11
					7-31-83	.035
					9- 5-83	0

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued				
Goose Creek a/	Potomac River	Lat 39°04'28", long 77°30'45", Loudoun County, 0.7 mi upstream from Tuscarora Creek, 0.8 mi upstream from bridge on State Highway 7, and 4.0 mi southeast of Leesburg.	-	-	9- 7-83	*2.55
Tuscarora Creek a/	Goose Creek	Lat 39°05'28", long 77°32'08", Loudoun County, 40 ft above Leesburg Waste Water Treatment plant, 1.4 mi above mouth, and 2.3 mi southeast of Leesburg.	-	-	9- 7-83	*1.21
Tuscarora Creek a/	Goose Creek	Lat 39°05'28", long 77°32'06", Loudoun County, 50 ft below Leesburg Waste Water Treatment plant, 1.4 mi above mouth, and 2.3 mi southeast of Leesburg.	-	-	9- 7-83	*2.54
Tuscarora Creek a/	Goose Creek	Lat 39°05'20", long 77°31'49", Loudoun County, 50 ft below low-water bridge, 1.1 mi above mouth, and 2.6 mi southeast of Leesburg.	-	-	9- 7-83	*3.40
Tuscarora Creek a/	Goose Creek	Lat 39°05'07", long 77°31'31", Loudoun County, 0.5 mi upstream from bridge on State Highway 653, 0.7 mi above mouth, and 3.0 mi southeast of Leesburg.	-	-	9- 7-83	*3.78
Tuscarora Creek a/	Goose Creek	Lat 39°05'04", long 77°31'02", Loudoun County, at bridge on State Highway 653, 0.3 mi above mouth, and 3.4 mi southeast of Leesburg.	-	-	9- 7-83	*2.67
Tuscarora Creek a/	Goose Creek	Lat 39°05'05", long 77°30'44", Loudoun County, 150 ft above mouth, 3.5 mi southeast of Leesburg.	-	-	9- 7-83	*3.18
Goose Creek a/	Potomac River	Lat 39°05'58", long 77°29'46", Loudoun County, 1.0 mi above mouth, 1.2 mi downstream from bridge on State Highway 7, and 3.8 mi east of Leesburg.	-	-	9- 6-83	*5.74
01658425 Quantico Creek tributary No. 3	Quantico Creek	Lat 38°36'27", long 77°23'59", Prince William County, along Farms to Forest Trail, 200 ft above mouth, and 3.1 mi southeast of Independent Hill.	0.65	-	3- 3-83	.80
01658430 Quantico Creek	Potomac River	Lat 38°36'26", long 77°23'57", Prince William County, along Farms to Forest Trail, 300 ft downstream from unnamed tributary, and 3.1 mi southeast of Independent Hill.	2.92	-	3- 3-83	3.97
01658450 Quantico Creek	Potomac River	Lat 38°36'09", long 77°22'09", Prince William County, at ford on Burma Fire Road, 5.0 mi southeast of Independent Hill.	4.86	1973	3-17-83	3.39
					3-30-83	6.90
					4-20-83	6.80
					5-24-83	4.99
					6-28-83	1.02
					7-18-83	.043
					8-23-83	.010
					9-20-83	.027
01658455 Quantico Creek tributary No. 2	Quantico Creek	Lat 38°35'40", long 77°21'34", Prince William County, 50 ft above mouth, 2.2 mi northwest of Dumfries.	-	-	4-20-83	0
					5-25-83	0
					6-28-83	0
					7-18-83	0
					8-23-83	0
					9-20-83	0

* Base flow.
a Furnished by Virginia State Water Control Board.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued				
01658460 Quantico Creek	Potomac River	Lat 38°35'23", long 77°21'26", Prince William County, 50 ft below Camp 4 Lake, 1.8 mi northwest of Dumfries.	5.92	-	3-17-83	5.36
					4-20-83	10.8
					5-24-83	6.63
					6-28-83	1.17
					7-18-83	.27
					8-23-83	(g)
					9-20-83	.046
01658475 Quantico Creek	Potomac River	Lat 38°34'35", long 77°21'05", Prince William County, 100 ft above Pyrite Mine, 1.1 mi northwest of Dumfries.	6.80	-	3-17-83	4.57
					4-20-83	11.3
					5-25-83	5.93
					6-28-83	1.03
					7-19-83	.19
					8-24-83	(g)
					9-20-83	(g)
01658480 Quantico Creek	Potomac River	Lat 38°34'22", long 77°20'51", Prince William County, at Pyrite Mine Road, 100 ft upstream from South Fork Quantico Creek, 1,000 ft below Pyrite Mine, and 0.8 mi west of Dumfries.	6.90	-	3-17-83	5.56
					3-30-83	11.5
					4-20-83	12.0
					5-25-83	7.23
					6-29-83	1.20
					7-19-83	.28
					8-24-83	.002
					9-21-83	.028
01658510 South Fork Quantico Creek tributary No. 7	South Fork Quantico Creek	Lat 38°35'53", long 77°25'08", Prince William County, at Oak Ridge campground, 250 ft below Loop Road, and 2.8 mi southeast of Independent Hill.	-	-	4-19-83	.10
					5-25-83	.12
					6-28-83	0
					7-18-83	0
					8-23-83	0
					9-20-83	0
01658530 South Fork Quantico Creek	Quantico Creek	Lat 38°35'07", long 77°24'46", Prince William County, at bridge on Mawavi Fire Road, 0.2 mi above Camp 5 Lake, and 2.2 mi northwest of Joplin.	9.01	-	3-10-82†	9.56
					8-23-83	.094
					9-20-83	.15
01658540 South Fork Quantico Creek tributary No. 8	South Fork Quantico Creek	Lat 38°34'47", long 77°24'47", Prince William County, at Camp 2, 50 ft above Camp 5 Lake, and 2.0 mi northwest of Joplin.	.27	-	4-19-83	.59
					5-24-83	.29
					6-28-83	.12
					7-18-83	.050
					8-23-83	.016
					9-20-83	.030
01658550 South Fork Quantico Creek	Quantico Creek	Lat 38°34'38", long 77°24'36", Prince William County, 400 ft below Camp 5 Lake, 1.7 mi northwest of Joplin.	9.62	-	3-10-82†	8.37
					4-19-83	15.0
					5-24-83	12.9
					6-28-83	.79
					7-18-83	.66
					8-22-83	.22
					9-20-83	.23
01658600 South Fork Quantico Creek	Quantico Creek	Lat 38°34'34", long 77°22'54", Prince William County, just above unnamed tributary, 1.0 mi north of Joplin.	11.6	1975	3-10-82†	10.8
01658601 South Fork Quantico Creek tributary No. 1	South Fork Quantico Creek	Lat 38°35'00", long 77°23'13", Prince William County, at High Meadows Trail, 0.6 mi above mouth, and 1.5 mi north of Joplin.	1.07	-	4-19-83	2.17
					5-24-83	1.26
					6-28-83	.21
					7-18-83	.095
					8-23-83	0
					9-20-83	.009
01658602 South Fork Quantico Creek tributary No. 1	South Fork Quantico Creek	Lat 38°34'35", long 77°22'53", Prince William County, 100 ft above mouth, 1.0 mi north of Joplin.	1.31	1975	3-10-82†	1.36
01658603 South Fork Quantico Creek	Quantico Creek	Lat 38°34'34", long 77°22'47", Prince William County, at park road bridge, 1.1 mi north of Joplin.	12.9	-	4-19-83	19.4
					5-24-83	12.6
					6-28-83	2.76
					7-18-83	1.30
					8-23-83	.15
					9-20-83	.37

† Not previously published.
g Ponded, no apparent flow.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		POTOMAC RIVER BASIN--Continued				
01658605 South Fork Quantico Creek tributary No. 2	South Fork Quantico Creek	Lat 38°34'31", long 77°22'31", Prince William County, 10 ft above mouth, 1.0 mi northeast of Joplin.	0.46	1975	3-10-82†	0.41
01658608 South Fork Quantico Creek tributary No. 4	South Fork Quantico Creek	Lat 38°34'03", long 77°21'56", Prince William County, 15 ft above mouth, 1.2 mi northeast of Joplin.	.12	-	3-10-82†	.16
01658610 South Fork Quantico Creek	Quantico Creek	Lat 38°34'03", long 77°21'54", Prince William County, at bridge on park road at Carters Day Camp, 1.2 mi northeast of Joplin.	14.5	1975	3-11-82†	10.0
					4-19-83	26.7
					5-24-83	16.2
					6-28-83	2.26
					7-18-83	1.08
					8-23-83	.18
					9-20-83	.34
01658612 South Fork Quantico Creek tributary No. 3	South Fork Quantico Creek	Lat 38°34'02", long 77°21'52", Prince William County, 20 ft above mouth, 1.2 mi northeast of Joplin.	.18	-	3-11-82†	.085
01658615 Mary Bird Branch	South Fork Quantico Creek	Lat 38°35'36", long 77°22'36", Prince William County, at culvert on Taylor Farm Fire Road, 2.3 mi north of Joplin.	.096	-	3-30-83	.15
					4-19-83	.26
					5-24-83	.077
					6-28-83	.008
					7-18-83	0
					8-23-83	0
					9-20-83	0
01658617 Mary Bird Branch	South Fork Quantico Creek	Lat 38°34'41", long 77°22'01", Prince William County, at culvert on park road near Turkey Run Ridge Campground, 1.8 mi west of Dumfries.	.64	1975	3-11-82†	.48
01658625 South Fork Quantico Creek tributary No. 5	South Fork Quantico Creek	Lat 38°33'49", long 77°21'28", Prince William County, at culvert on Orenda Fire Road, near Camp 3, 0.1 mi above mouth, and 1.1 mi west of Dumfries.	.19	-	3-11-82†	.23
					4-19-83	.55
					5-24-83	.36
					6-28-83	.69
					7-19-83	.060
					8-23-83	0
					9-20-83	.025
01658630 South Fork Quantico Creek	Quantico Creek	Lat 38°33'59", long 77°21'12", Prince William County, at ford on Orenda Fire Road, 0.8 mi west of Dumfries.	16.2	-	3-11-82†	12.2
01658635 South Fork Quantico Creek tributary No. 6	South Fork Quantico Creek	Lat 38°34'00", long 77°21'11", Prince William County, 75 ft above mouth, 0.8 mi west of Dumfries.	.21	-	3-11-82†	.15
01658650 South Fork Quantico Creek	Quantico Creek	Lat 38°34'18", long 77°20'57", Prince William County, 0.1 mi above mouth, 0.8 mi west of Dumfries.	16.6	1973	3-30-83	29.6
					4-19-83	33.4
					5-25-83	14.0
					6-29-83	3.15
					7-19-83	1.17
					8-24-83	.19
					9-21-83	.49
01658651 South Fork Quantico Creek tributary No. 7	South Fork Quantico Creek	Lat 38°34'21", long 77°20'55", Prince William County, at culvert on foot trail along north bank of South Fork Quantico Creek, 0.8 mi west of Dumfries.	-	-	3-29-83	.067

† Not previously published.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
RAPPAHANNOCK RIVER BASIN						
01662100 Hazel River b/	Rappahannock River	Lat 38°36'54", long 78°15'44", Rappahannock County, at Shenandoah National Park boundary, 700 ft below Sams Run, and 3.2 mi north of Nethers.	5.15	1981-82	10-28-82	3.93
					12- 1-82	11.0
					1- 5-83	4.32
					2- 1-83	6.28
					3- 1-83	7.27
					4- 7-83	31.8
					5-11-83	7.03
					7-15-83	4.34
					8-10-83	2.48
					9-28-83	.59
01662150 Hughes River b/	Hazel River	Lat 38°34'27", long 78°17'49", Madison County, at Nicholson Hollow Trail, 500 ft above Brokenback Run, and 1.0 mi west of Nethers.	9.92	1961, 1981-82	7-15-83	5.24
					8-10-83	4.20
					9-28-83	1.24
Brokenback Run b/	Hughes River	Lat 38°34'38", long 78°20'40", Madison County, along Corbin Hollow Trail at about 2,490 ft elevation, 3.6 mi west of Nethers.	.57	-	8-30-83	.173
Brokenback Run b/	Hughes River	Lat 38°34'30", long 78°19'56", Madison County, along Corbin Hollow Trail at about 2,000 ft elevation, 3.0 mi west of Nethers.	1.25	-	8-30-83	.198
Brokenback Run b/	Hughes River	Lat 38°34'18", long 78°19'32", Madison County, along Corbin Hollow Trail at about 1,740 ft elevation, 2.6 mi west of Nethers.	1.64	-	8-30-83	.188
Brokenback Run b/	Hughes River	Lat 38°34'03", long 78°18'57", Madison County, along Weakley Hollow Road at about 1,360 ft elevation, 2.2 mi west of Nethers.	2.90	-	8-30-83	.186
Brokenback Run b/	Hughes River	Lat 38°34'16", long 78°18'27", Madison County, along Weakley Hollow Road at about 1,200 ft elevation, 1.6 mi west of Nethers.	3.47	-	8-30-83	.244
01662160 Brokenback Run b/	Hughes River	Lat 38°34'16", long 78°18'01", Madison County, at Shenandoah National Park boundary, 0.4 mi above mouth, and 1.1 mi west of Nethers.	4.30	1981-82	10-28-82	1.34
					12- 1-82	9.48
					1- 5-83	3.57
					2- 1-83	4.67
					3- 1-83	11.4
					4- 7-83	24.4
					5-11-83	10.7
					7-15-83	2.10
					8-10-83	1.12
					8-30-83	.43
					9-28-83	.26
01662190 Ragged Run b/	Popham Run	Lat 38°31'56", long 78°17'44", Madison County, at side of State Highway 645, 1.7 mi above mouth, and 1.8 mi west of Etlan.	1.14	1981-82	10-28-82	.25
					12- 1-82	3.31
					1- 5-83	.93
					2- 2-83	1.08
					3- 1-83	3.53
					4- 7-83	6.34
					5-11-83	1.87
					7-14-83	.32
					8-10-83	.24
					9-28-83	.097
01662310 Thornton River b/	Hazel River	Lat 38°39'12", long 78°16'23", Rappahannock County, 100 ft below bridge on U.S. Highway 211 at Shenandoah National Park boundary, 3.5 mi west of Sperryville, and 4.0 mi west of North Fork Thornton River.	6.40	1982	6-22-82†	12.5
					7-20-82†	2.94
					8-26-82†	2.60
					9-21-82†	1.80
					10-28-82	3.33
					12- 1-82	14.1
					1- 5-83	4.88
					1-31-83	6.51
					2-28-83	17.6
					4- 7-83	31.3
					5-10-83	13.5
					7-14-83	3.17
					8- 9-83	1.34
					9-27-83	.565

† Not previously published.
b Hydrology in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
		RAPPAHANNOCK RIVER BASIN--Continued				
01662350 North Fork Thornton River b/	Thornton River	Lat 38°41'36", long 78°16'33", Rappahannock County, 400 ft above Shenandoah National Park boundary, 3.3 mi above Piney River, and 3.4 mi northwest of Sperryville.	7.21	1981-82	10-28-82 12- 1-82 1- 5-83 1-31-83 2-28-83 4- 7-83 5-10-83 7-14-83 8- 9-83 9-27-83	1.86 13.2 3.26 4.95 18.4 30.1 9.40 1.81 .71 .23
01662370 Piney River b/	North Fork Thornton River	Lat 38°41'46", long 78°15'30", Rappahannock County, at culvert on fire road, 2.1 mi above mouth, and 3.0 mi northwest of Sperryville.	5.58	1981-82	7-14-83 8-10-83 9-27-83	1.60 1.42 .24
01662490 Rush River b/	Covington River	Lat 38°43'37", long 78°10'13", Rappahannock County, at bridge on State Highway 624, 1.0 mi northwest of Washington, and 1.5 mi upstream from U.S. Highways 211 and 522.	11.06	1982	6- 2-82† 6-22-82† 7-20-82† 8-26-82† 9-21-82† 10-28-82 12- 1-82 1- 5-83 1-31-83 2-28-83 4- 7-83 5-10-83 7-14-83 8- 9-83 9-27-83	18.4 15.1 5.63 1.08 .51 2.49 16.6 4.20 6.68 25.4 42.2 13.6 1.02 .376 .107
01662500 Rush River b/	Thornton River	Lat 38°42'50", long 78°09'05", Rappahannock County, at bridge on old U.S. Highways 211 and 522, 0.5 mi east of Washington.	14.7	1952, 1953-77‡, 1981-82	6- 2-82† 8-25-82† 9-21-82† 10-28-82 12- 1-82 1- 5-83 1-31-83 2-28-83 4- 7-83 5-10-83 7-14-83 8- 9-83 9-27-83	19.3 1.34 .56 2.77 17.2 4.55 7.42 29.5 49.8 18.5 .91 .24 .063
01665260 Rapidan River b/	Rappahannock River	Lat 38°26'38", long 78°22'11", Madison County, 300 ft west of Rapidan Road, 100 ft above Staunton River, and 1.4 mi north of Graves Mill.	9.74	1981-82	7-14-83 8-10-83	4.34 5.20
Staunton River b/	Rapidan River	Lat 38°28'00", long 78°25'06", Madison County, along radio tower access road at about 2,950 ft elevation, 4.0 mi northwest of Graves Mill.	.50	-	8-31-83	.14
Staunton River b/	Rapidan River	Lat 38°27'43", long 78°24'37", Madison County, along radio tower access road at about 2,440 ft elevation, 3.4 mi northwest of Graves Mill.	.94	-	8-31-83	.26
Staunton River b/	Rapidan River	Lat 38°27'32", long 78°23'52", Madison County, along Staunton River Trail at about 2,000 ft elevation, 2.8 mi northwest of Graves Mill.	2.02	-	8-31-83	.60
Staunton River b/	Rapidan River	Lat 38°27'31", long 78°23'14", Madison County, along Staunton River Trail at about 1,680 ft elevation, 2.5 mi northwest of Graves Mill.	2.55	-	8-31-83	.57
Staunton River b/	Rapidan River	Lat 38°26'57", long 78°22'43", Madison County, along Staunton River Trail at about 1,280 ft elevation, 1.9 mi northwest of Graves Mill.	3.23	-	8-31-83	.54

† Not previously published.
‡ Operated as a continuous-record gaging station.
b Hydrology in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		RAPPAHANNOCK RIVER BASIN--Continued				
01665270 Staunton River b/	Rapidan River	Lat 38°26'38", long 78°22'12", Madison County, 100 ft west of Rapidan Road, 100 ft above mouth, and 1.4 mi north of Graves Mill.	4.21	1981-82	10-29-82	1.04
					12- 2-82	8.39
					1- 5-83	5.26
					2- 1-83	4.99
					3- 1-83	15.4
					4- 7-83	33.8
					5-11-83	8.73
					7-14-83	1.56
					8-10-83	1.60
					8-31-83	.74
					9-28-83	.45
01665340 Conway River b/	Rapidan River	Lat 38°24'59", long 78°26'17", Greene and Madison Counties, at ford on State Highway 667, 1.1 mi downstream from Devils Ditch, and 3.3 mi north of Kinderhook.	9.66	1981-82	7-14-83	2.28
					8- 9-83	1.68
					8-10-83	2.64
					9-28-83	.81
01665440 South River b/	Rapidan River	Lat 38°22'01", long 78°27'38", Greene County, at bridge on State Highway 642, 30 ft upstream from Entry Run, and 1.2 mi north of McMullen.	4.94	1963, 1981-82	10-28-82	1.13
					12- 2-82	18.2
					1- 6-83	3.63
					2- 1-83	3.85
					3- 2-83	12.4
					4- 8-83	20.6
					5-12-83	5.03
					7-15-83	.59
					8- 9-83	.16
					9-28-83	.20
01665710 Unnamed tributary b/	Robinson River	Lat 38°32'23", long 78°20'53", Madison County, at culvert on White Oak Canyon Trail, 800 ft above mouth, 1.2 mi downstream from Negro Run, and 3.7 mi north of Syria.	5.41	1981-82	10-28-82	4.36
					12- 1-82	12.8
01665740 Robinson River b/	Rapidan River	Lat 38°32'15", long 78°20'48", Madison County, 40 ft below confluence with Cedar Run, 400 ft below bridge on State Highway 600 at Shenandoah National Park boundary, and 3.5 mi north of Syria.	9.4	-	1- 5-83	8.01
					2- 1-83	10.5
					3- 1-83	26.1
					4- 7-83	63.2
					5-11-83	11.0
					7-14-83	2.21
					8-10-83	2.13
					9-28-83	.405
01665800 Rose River b/	Robinson River	Lat 38°30'55", long 78°21'59", Madison County, at Shenandoah National Park boundary, 1.8 mi above Strother Run, and 2.8 mi northwest of Syria.	9.15	1981-82	12- 2-82	36.8
					1- 5-83	10.1
					2- 1-83	10.8
					3- 1-83	24.5
					4- 7-83	45.0
					5-11-83	12.0
					7-14-83	2.31
					8-10-83	3.10
					9-28-83	.582
		YORK RIVER BASIN				
01670500 North Anna River	Pamunkey River	Lat 37°57'00", long 77°35'05", Hanover-Caroline County line, at bridge on State Highway 603, 2.0 mi north of Hewlett.	454	1926-28*	9-26-83	58.8
01670600 North Anna River	Pamunkey River	Lat 37°56'11", long 77°33'43", Hanover-Caroline County line, at bridge on State Highway 601, 1.3 mi northeast of Hewlett.	-	-	9-26-83	61.2
01671005 North Anna River	Pamunkey River	Lat 37°53'01", long 77°27'58", Hanover-Caroline County line, at bridge on U.S. Highway 1, 2.0 mi north of Doswell.	-	-	9-26-83	59.1
01671020 North Anna River	Pamunkey River	Lat 37°51'00", long 77°25'41", Hanover County, at bridge on State Highway 30, 0.3 mi west of Hart Corner, and 1.9 mi east of Doswell.	463	1980-82*	9-26-83	62.0
					9-27-83	60.0

* Operated as a continuous-record gaging station.
b Hydrology in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		YORK RIVER BASIN--Continued				
North Anna River a/	Pamunkey River	Lat 37°49'32", long 77°25'35", Caroline-Hanover County line, at confluence with Little River, 1.8 mi downstream from bridge on State Highway 30, and 3.0 mi southeast of Doswell.	-	1979-82	10- 5-82 11-10-82 7-11-83 8-22-83	*63.8 *76.3 *77.3 *55.5
Beaver Creek a/	South Anna River	Lat 38°00'41", long 77°58'44", Louisa County, 0.4 mi upstream from U.S. Highway 33, 1.0 mi southeast of intersection of U.S. Highway 33 and State Highway 22, and 1.6 mi southeast of Louisa.	-	-	12- 9-82	*.061
Beaver Creek a/	South Anna River	Lat 37°57'52", long 77°59'28", Louisa County, at ford, 1.9 mi above mouth, and 4.2 mi south of Louisa.	-	-	12- 8-82	*2.14
Beaver Creek a/	South Anna River	Lat 37°57'03", long 77°58'37", Louisa County, at low-water bridge, 0.5 mi above mouth, and 5.3 mi south of Louisa.	-	-	12- 8-82	*2.50
01671100 Little River	North Anna River	Lat 37°52'21", long 77°30'48", Hanover County, at bridge on State Highway 685, 2.9 mi west of Doswell.	107	1962-82‡	9-26-83	1.09
01671110 Little River	North Anna River	Lat 37°50'45", long 77°30'22", Hanover County, at bridge on State Highway 688, 0.8 mi northeast of Hanover Academy, and 2.5 mi southwest of Doswell.	-	-	9-26-83	.96
01671120 Little River	North Anna River	Lat 37°49'53", long 77°28'10", Hanover County, at bridge on U.S. Highway 1, 4.0 mi north of Ashland.	-	-	9-26-83	.86
01671125 Little River	North Anna River	Lat 37°49'32", long 77°27'29", Hanover County, at bridge on State Highway 689, at Taylorsville, and 4.0 mi north of Ashland.	117	1959	9-26-83 9-27-83	1.24 1.01
01672500 South Anna River	Pamunkey River	Lat 37°47'48", long 77°32'57", Hanover County, at bridge on State Highway 54, 4.5 mi northwest of Ashland.	394	1931-82‡	9-26-83	11.5
01672520 South Anna River	Pamunkey River	Lat 37°47'57", long 77°31'55", Hanover County, at bridge on State Highway 686, 3.1 mi northwest of Ashland.	-	-	9-26-83	13.8
Stagg Creek	South Anna River	Lat 37°47'29", long 77°32'23", Hanover County, at bridge on State Highway 54, 3.2 mi northwest of Ashland.	-	-	9-26-83	0
Stagg Creek	South Anna River	Lat 37°47'52", long 77°31'53", Hanover County, at bridge on State Highway 686, 3.0 mi northwest of Ashland.	-	-	9-26-83	0
01672530 South Anna River	Pamunkey River	Lat 37°48'12", long 77°30'32", Hanover County, at bridge on State Highway 667, 2.6 mi northwest of Ashland.	-	-	9-26-83 9-27-83	11.7 12.3
01672800 Newfound River	South Anna River	Lat 37°50'35", long 77°32'30", Hanover County, at bridge on State Highway 685, 1.3 mi west of Hanover Academy, and 5.8 mi northwest of Ashland.	-	1952-54, 1981-82	9-27-83	.81
01672820 Newfound River	South Anna River	Lat 37°49'17", long 77°30'47", Hanover County, at bridge on State Highway 667, 4.0 mi southwest of Ashland.	-	-	9-27-83	.59

* Base flow.
‡ Operated as a continuous-record gaging station.
a Furnished by the Virginia State Water Control Board.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		YORK RIVER BASIN--Continued				
01672850 South Anna River	Pamunkey River	Lat 37°48'25", long 77°28'23", Hanover County, at bridge on U.S. Highway 1, 2.9 mi north of Ashland.	-	1979-80	9-26-83 9-27-83 9-27-83	12.9 11.9 9.70
Falling Creek	South Anna River	Lat 37°46'35", long 77°31'01", Hanover County, at culvert on State Highway 54, 1.5 mi northwest of Ashland.	-	-	9-26-83	0
01672865 South Anna River	Pamunkey River	Lat 37°47'59", long 77°25'28", Hanover County, at bridge on State Highway 738, 1.0 mi above mouth, and 4.0 mi northeast of Ashland.	-	1980	9-27-83	13.0
01672885 Pamunkey River	York River	Lat 37°47'20", long 77°22'14", Hanover County, at bridge on U.S. Highway 301, 1.5 mi north of Hanover.	-	1942, 1979-80	9-27-83	71.9
01673000 Pamunkey River	York River	Lat 37°46'00", long 77°19'30", Hanover-King William County line, 0.4 mi above State Highway 614, 2.5 mi east of Hanover.	-	1942-82*	9-27-83	72.2
01673010 Meachumps Creek	Pamunkey River	Lat 37°45'30", long 77°21'53", Hanover County, at culvert on U.S. Highway 301, 0.3 mi south of Hanover.	-	1976	9-27-83	1.53
Pamunkey River tributary No. 6	Pamunkey River	Lat 37°44'20", long 77°20'22", Hanover County, at culvert on State Highway 605, 2.4 mi southeast of Hanover.	-	-	9-27-83	0
Unnamed tributary	Pamunkey River tributary No. 6	Lat 37°44'28", long 77°20'25", Hanover County, at culvert on State Highway 605, 2.2 mi southeast of Hanover.	-	-	9-27-83	0
01673020 Crump Creek	Pamunkey River	Lat 37°43'20", long 77°18'30", Hanover County, at culvert on State Highway 605, 3.1 mi east of Crosses Corner.	-	-	9-27-83	h.3
01673025 Pamunkey River	York River	Lat 37°42'55", long 77°17'22", Hanover-King William County line, at bridge on State Highway 615, 2.2 mi north of Studley.	-	1979-80	9-27-83	93.3
Mantilo Branch	Pamunkey River	Lat 37°42'08", long 77°16'03", Hanover County, at culvert on State Highway 605, 2.2 mi northeast of Studley.	-	-	9-27-83	0
01673250 Pamunkey River	York River	Lat 37°42'52", long 77°13'53", Hanover-King William County line, 200 ft above end of State Highway 602, 2.2 mi south of Enfield.	-	1979-80	9-27-83	91.6
01673560 Totopotomoy Creek	Pamunkey River	Lat 37°40'45", long 77°13'08", Hanover County, at bridge on State Highway 605, 0.7 mi above mouth, and 4.1 mi southeast of Manquin.	30.9	1980-81	9-27-83	3.54
01677200 Skimino Creek	York River	Lat 37°21'58", long 76°42'57", James City County, at bridge on State Highway 604, below Barlows Pond, 2.9 mi northeast of Lightfoot, and 4.4 mi above mouth.		1982	5- 6-83 7-14-83 8-25-83	5.27 5.33 3.90
		JAMES RIVER BASIN				
Wilson Creek a/	Jackson River	Lat 37°54'34", long 79°47'48", Bath County, at Douthat State Park just above Douthat Lake, 6.5 mi north of Clifton Forge.	-	-	9- 7-83	.35

* Operated as a continuous-record gaging station.
a Furnished by the Virginia State Water Control Board.
h Estimated.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		JAMES RIVER BASIN--Continued				
Wilson Creek a/	Jackson River	Lat 37°54'08", long 79°48'15", Bath County, at Douthat State Park, 400 ft downstream from Douthat Lake spillway, and 6.0 mi north of Clifton Forge.	-	-	9- 7-83	0.20
Wilson Creek a/	Jackson River	Lat 37°51'24", long 79°48'49", Alleghany County, at Whispering Pines Camp area, 100 ft south of Douthat State Park boundary, and 2.8 mi north of Clifton Forge.	-	-	9- 7-83	.12
02020180 East Fork Elk Creek	Elk Creek	Lat 37°35'28", long 79°30'31", Rockbridge County, at bridge on State Highway 759, 0.2 mi above mouth, and 4.6 mi south of Natural Bridge.	-	-	11-19-82	0
North Fork Moormans River	Moormans River	Lat 38°12'47", long 78°43'38", Albemarle County, at ford on forest trail, 1.6 mi above Little Gate Branch, and 3.0 mi west of Browns Cove.	1.62	-	8-29-83	.27
02031400 North Fork Moormans River b/	Moormans River	Lat 38°11'42", long 78°43'57", Albemarle County, 200 ft above ford on Shenandoah National Park Fire Road, 0.9 mi above Little Gate Branch, and 3.3 mi west of Browns Cove.	2.60	1981-82	8-29-83	.34
02031410 Unnamed tributary b/	North Fork Moormans River	Lat 38°12'23", long 78°44'52", Albemarle County, 70 ft below Skyline Drive, 1.5 mi above mouth, and 4.6 mi east of Harriston.	.21	1981-82	8-29-83	.034
02031420 Unnamed tributary b/	North Fork Moormans River	Lat 38°11'50", long 78°44'32", Albemarle County, at side of Shenandoah National Park fire road, 0.5 mi above mouth, and 3.8 mi west of Browns Cove.	.70	1981-82	8-29-83	.076
North Fork Moormans River	Moormans River	Lat 38°10'32", long 78°44'25", Albemarle County, along North Fork forest road, 0.2 mi below Shop Run, and 4.2 mi southwest of Browns Cove.	5.82	-	8-29-83	1.69
02031440 North Fork Moormans River b/	Moormans River	Lat 38°09'23", long 78°44'56", Albemarle County, at ford on Shenandoah National Park fire road, 0.7 mi below Big Branch, and 5.4 mi northwest of White Hall.	9.12	1981-82	8-29-83	1.33
02031500 North Fork Moormans River b/	Moormans River	Lat 38°08'25", long 78°45'05", Albemarle County, 300 ft above State Highway 614, 0.5 mi above confluence with South Fork, and 5.1 mi west of White Hall.	11.4	1944-46, 1952-63*, 1977, 1981-82	8-29-83	1.80
02032545 Ivy Creek b/	Lynch River	Lat 38°16'07", long 78°36'45", Greene County, at bridge on State Highway 601, 1.0 mi below Shenandoah National Park boundary, and 2.5 mi north of Boonesville.	6.11	1981-82	10-29-82 12- 2-82 1- 4-83 1-31-83 3- 2-83 4- 8-83 5-12-83 7-13-83 8- 8-83 9-27-83	.88 22.6 3.05 4.94 18.9 18.7 3.53 .16 .18 .037
James River	Chesapeake Bay	Lat 37°39'56", long 77°53'23", Goochland-Powhatan County line, 100 ft upstream from U.S. Highway 522, at Maidens.	-	1982	10- 8-81† 9-19-83 9-21-83	716 1,040 955

† Not previously published.
* Operated as a continuous-record gaging station.
a Furnished by the Virginia State Water Control Board.
b Hydrology in the Shenandoah National Park.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft³/s)
JAMES RIVER BASIN--Continued						
James River a/	Chesapeake Bay	Lat 37°38'05", long 77°49'55", Goochland-Powhatan County line, at State Farm, 1,000 ft downstream from low-water bridge, and 3.8 mi downstream from bridge on U.S. Highway 522.	-	-	9-19-83 9-21-83	*1,170 909
Unnamed tributary	Angola Creek	Lat 37°22'16", long 78°17'48", Cumberland County, at mouth, 50 ft east of State Highway 664, and 3.9 mi southwest of Angola.	-	1981-82	9-30-82† 10-20-82 8- 1-83	.15 .20 .11
02042752 Mill Creek	Diascund Creek	Lat 37°23'23", long 76°52'05", James City County, at culvert on State Highway 603, 0.4 mi south of Diascund, and 1.9 mi above mouth.	-	1982	5- 5-83 7-14-83 8-26-83	10.9 3.59 .26
02042754 Yarmouth Creek	Chickahominy River	Lat 37°20'48", long 76°48'56", James City County, at culvert on State Highway 632, below Cranstons Pond, and 2.4 mi south of Toano.	-	1982	5- 5-83 7-14-83 8-26-83	6.31 6.93 1.45
02042756 Gordon Creek	Chickahominy River	Lat 37°17'48", long 76°49'10", James City County, at bridge on State Highway 633, below Jolly Pond, and 4.7 mi southwest of Lightfoot.	-	1982	5- 5-83 7-14-83 8-25-83	5.76 .066 46
02042765 Unnamed tributary	James River	Lat 37°15'18", long 76°48'46", James City County, at culvert on State Highway 5, 1.0 mi above mouth, and 2.6 mi west of Five Forks.	-	1982	5- 5-83 7-14-83 8-25-83	1.23 .28 .025
02042780 West Branch Long Hill Swamp	Powhattan Creek	Lat 37°18'50", long 76°46'02", James City County, at culvert on State Highway 612, 2.0 mi south of Lightfoot.	2.47	1970-76, 1978-82	5- 6-83 7-15-83 8-26-83	3.05 .95 .80
CHOWAN RIVER BASIN						
Buckhorn Swamp a/	Nottoway River	Lat 36°43'17", long 77°09'35", Southampton County, at bridge on State Highway 652, 5.0 mi west of Courtland.	-	1982	1- 4-83 2-24-83 4- 5-83 7-12-83 8-23-83	*14.2 17.0 *6.18 0 0
Buckhorn Swamp a/	Nottoway River	Lat 36°45'00", long 77°09'33", Southampton County, at bridge on State Highway 651, 5.4 mi northwest of Courtland.	-	1982	11-10-82 1- 4-83 2-24-83 4- 5-83 7-12-83 8-23-83	*3.22 *27.7 41.6 *13.5 <.01 0
Nottoway Swamp a/	Nottoway River	Lat 36°43'22", long 76°59'43", Southampton County, at bridge on State Highway 611, 2.4 mi northwest of Hunterdale.	-	1982	1- 4-83 2-24-83 4- 5-83 7-12-83 8-23-83	*21.9 30.2 *11.0 0 0
ROANOKE RIVER BASIN						
02058300 Tomahawk Creek	Pigg River	Lat 36°52'57", long 79°32'25", Pittsylvania County, at bridge on State Highway 649, 2.8 mi west of Climax.	-	-	9-27-83	8.84
02058400 Pigg River	Roanoke River	Lat 36°56'45", long 79°31'30", Pittsylvania County, 300 ft downstream from Harpen Creek, 0.5 mi above State Highway 40 bridge, and 1.1 mi south of Sandy Level.	350	1963-82‡	9-27-83	77.9

* Base flow.
< Less than.
† Not previously published.
‡ Operated as a continuous-record gaging station.
a Furnished by the Virginia State Water Control Board.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		ROANOKE RIVER BASIN--Continued				
02062350 Straightstone Creek	Roanoke River	Lat 37°01'11", long 79°09'19", Pittsylvania County, at bridge on State Highway 668, 0.4 mi northeast of Straightstone.	-	-	9-29-83	1.01
02074084 Cascade Creek	Dan River	Lat 36°34'03", long 79°40'42", Pittsylvania County, at bridge on State Highways 621 and 855, 0.5 mi northwest of Cascade.	-	-	9-29-83	2.60
02074470 Sugartree Creek	Sandy River	Lat 36°39'22", long 79°35'15", Pittsylvania County, at bridge on State Highway 853, 2.7 mi northeast of Brosville.	-	-	9-28-83	2.62
02074500 Sandy River	Dan River	Lat 36°37'10", long 79°30'16", Pittsylvania County, at bridge on State Highway 863, 5.5 mi northwest of Danville.	-	1930-82*	9-28-83	28.0
02074600 Dry Fork	Sandy Creek	Lat 36°39'55", long 79°27'48", Pittsylvania County, at culvert on State Highway 866, 100 ft above mouth, 2.5 mi west of Mount Hermon, and 3.7 mi northwest of Danville.	2.64	-	9-29-83	.0009
02076220 Bearskin Creek	Banister River	Lat 36°48'00", long 79°28'23", Pittsylvania County, 30 ft above bridge on State Highway 612, 4.3 mi west of Chatham.	-	1953-54	9-27-83	4.36
02076260 White Oak Creek	Banister River	Lat 36°44'54", long 79°25'14", Pittsylvania County, at bridge on State Highway 718, 1.0 mi southwest of Dry Fork.	-	-	9-27-83	(g)
02076320 Cherrystone Creek	Banister River	Lat 36°48'13", long 79°23'37", Pittsylvania County, 100 ft below bridge on U.S. Highway 29, at Chatham.	-	1947	9-27-83	5.74
02076360 Little Cherrystone Creek	Cherrystone Creek	Lat 36°48'58", long 79°20'44", Pittsylvania County, 30 ft above bridge on State Highway 832, 2.3 mi east of Chatham.	-	-	9-27-83	1.49
02076415 Whitethorn Creek	Banister River	Lat 36°53'43", long 79°20'37", Pittsylvania County, 30 ft below bridge on State Highway 676, 1.5 mi northwest of Sonans, and 3.5 mi south of Gretna.	-	-	9-28-83	5.57
02076500 Georges Creek	Whitethorn Creek	Lat 36°56'11", long 79°18'42", Pittsylvania County, 50 ft above bridge on State Highway 40, 2.8 mi southeast of Gretna.	9.24	1949-82*	9-27-83	3.17
02076550 Shockoe Creek	Banister River	Lat 36°52'03", long 79°12'51", Pittsylvania County, 300 ft below bridge on State Highway 686, 2.2 mi north of Java.	-	-	9-28-83	.20
02076600 Stinking River	Banister River	Lat 36°55'56", long 79°14'30", Pittsylvania County, 20 ft above bridge on State Highway 40, 2.7 mi west of Mt. Airy.	-	1953-54	9-27-83	6.38
02076690 Allen Creek	Banister River	Lat 36°57'14", long 79°08'42", Pittsylvania County, 50 ft above bridge on State Highway 40, 2.8 mi east of Mt. Airy.	-	-	9-28-83	.44

* Operated as a continuous-record gaging station.
g Ponded, no apparent flow.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		ROANOKE RIVER BASIN--Continued				
02076740 Elkhorn Creek	Banister River	Lat 36°52'09", long 79°09'04", Pittsylvania County, 25 ft below bridge on State Highway 680, 1.8 mi southeast of Riceville.	-	-	9-28-83	3.54
02076760 Sandy Creek	Banister River	Lat 36°45'54", long 79°15'37", Pittsylvania County, at bridge on State Highway 713, 2.3 mi southeast of Spring Garden.	-	-	9-27-83	3.59
		KANAWHA RIVER BASIN				
Chestnut Creek a/	New River	Lat 36°42'23", long 80°54'58", Carroll County, 2.3 mi downstream from bridge on State Highway 721, 2.8 mi north of Galax.	-	-	8-10-83 8-10-83	.54 .58
Unnamed tributary a/	Chestnut Creek	Lat 36°42'23", long 80°54'59", Carroll County, 10 ft above confluence with Chestnut Creek, 2.8 mi north of Galax.	-	-	8-10-83 8-10-83	43.1 45.2
		BIG SANDY RIVER BASIN				
032080668 Cane Creek tributary No. 3	Cane Creek	Lat 37°04'18", long 82°09'43", Dickenson County, at culvert on State Highway 601, at mouth, and 0.8 mi southwest of Duty.	0.64	1981-82	7-28-81†	.008
032081030 Fryingpan Creek	Russell Fork	Lat 37°04'03", long 82°12'50", Dickenson County, at footbridge just above junction with Lick Branch, 3.5 mi southwest of Duty.	4.25	-	7-17-81†	.78
032081032 Lick Branch tributary No. 1	Lick Branch	Lat 37°04'21", long 82°11'12", Dickenson County, 50 ft above mouth, 2.0 mi southwest of Duty.	.28	-	7-27-81†	<.001
032081034 Lick Branch tributary No. 2	Lick Branch	Lat 37°04'21", long 82°12'06", Dickenson County, at mouth, 2.8 mi southwest of Duty.	.81	-	7-27-81†	0
032081036 Lick Branch	Fryingpan	Lat 37°04'05", long 82°12'50", Dickenson County, at mouth, 3.5 mi southwest of Duty.	3.55	-	7-17-81†	0
032081038 Fryingpan Creek tributary No. 1	Fryingpan Creek	Lat 37°04'20", long 82°13'03", Dickenson County, at culvert on State Highway 600, 3.7 mi west of Duty.	.21	-	7-17-81†	<.010
032081040 Big Spruce Pine Branch	Fryingpan Creek	Lat 37°05'05", long 82°13'27", Dickenson County, 30 ft above mouth, 4.0 mi west of Duty.	1.11	-	7-17-81†	.076
032081042 Little Spruce Pine Branch	Fryingpan Creek	Lat 37°05'32", long 82°13'54", Dickenson County, 100 ft above mouth, 4.4 mi northwest of Duty.	.20	-	7-17-81†	<.010
032081044 Big Yellow Lick Branch	Fryingpan Creek	Lat 37°05'59", long 82°13'57", Dickenson County, 50 ft above mouth, 3.7 mi southwest of Murphy.	.59	-	7-17-81†	.019

† Not previously published.
< Less than.
a Furnished by the Virginia State Water Control Board.

Discharge measurements made at special study and miscellaneous sites during water year 1983--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		BIG SANDY RIVER BASIN--Continued				
032081046 Little Yellow Lick Branch	Fryingpan Creek	Lat 37°06'17", long 82°14'02", Dickenson County, 100 ft above mouth, 3.7 mi southwest of Murphy.	0.63	-	7-16-81†	0.18
032081048 Fryingpan Creek tributary No. 2	Fryingpan Creek	Lat 37°06'53", long 82°14'27", Dickenson County, 75 ft above mouth, 2.8 mi south of Colley.	.27	-	7-16-81†	.032
032081050 Fryingpan Creek	Russell Fork	Lat 37°06'53", long 82°14'28", Dickenson County, 50 ft below tributary, 0.6 mi north of Tiny, and 2.7 mi south of Colley.	15.9	-	7-16-81†	11.8
032081052 Fryingpan Creek tributary No. 3	Fryingpan Creek	Lat 37°07'27", long 82°14'09", Dickenson County, 100 ft above mouth, 2.1 mi south of Colley.	.19	-	7-16-81†	.044
032081054 Fryingpan Creek tributary No. 4	Fryingpan Creek	Lat 37°07'34", long 82°13'48", Dickenson County, 10 ft above mouth, 2.1 mi southeast of Colley.	.17	-	7-16-81†	.010
032081070 Priest Fork	Fryingpan Creek	Lat 37°05'47", long 82°11'45", Dickenson County, at Spruce Pine Gap, 50 ft above tributary, and 2.6 mi northwest of Duty.	.21	-	7-27-81†	<.001
032081072 Priest Fork tributary No. 1	Priest Fork	Lat 37°05'48", long 82°11'49", Dickenson County, 50 ft above mouth, 2.7 mi northwest of Duty.	.22	-	7-27-81†	<.001
032081074 Priest Fork tributary No. 2	Priest Fork	Lat 37°06'33", long 82°12'19", Dickenson County, at mouth, 2.2 mi southwest of Murphy.	.23	-	7-27-81†	0
032081076 Priest Fork tributary No. 3	Priest Fork	Lat 37°07'00", long 82°12'57", Dickenson County, at mouth, 2.4 mi southwest of Murphy.	.10	-	7-27-81†	0
032081078 Priest Fork	Fryingpan Creek	Lat 37°07'26", long 82°12'53", Dickenson County, 100 ft above Sportsman Lake, 2.3 mi west of Murphy.	1.89	-	7-27-81†	.01
032081080 Priest Fork tributary No. 4	Priest Fork	Lat 37°07'40", long 82°13'20", Dickenson County, 200 ft above mouth, 2.3 mi southeast of Colley.	.34	-	7-27-81†	.004

† Not previously published.
< Less than.

Samples are collected at partial-record, special study, and miscellaneous sites to give better areal coverage. The results of these samples are given herein.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

POTOMAC RIVER BASIN

01658425 - QUANTICO CR TRIB NO 3 NR INDEPENDENT HILL VA (LAT 38 36 27 LONG 077 23 59)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
MAR , 1983					
30...	1505	.80	10.0	27	--

01658430 - QUANTICO CR AL FARM TR NR INDEPENDENT HILL VA (LAT 38 36 26 LONG 077 23 57)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
MAR , 1983					
30...	1445	4.0	9.0	43	--

01658450 - QUANTICO CR AT BURMA RD NR INDEPENDENT HILL VA (LAT 38 36 09 LONG 077 22 09)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
MAR , 1983					
17...	1210	3.4	9.0	43	--
30...	1130	6.9	7.0	42	--
APR					
20...	0845	6.8	6.0	37	--
MAY					
29...	1130	5.0	16.0	42	--
JUN					
28...	1510	1.0	24.0	44	20
JUL					
18...	1540	.04	25.0	52	--
AUG					
23...	1345	.01	22.0	73	--
SEP					
20...	1445	.03	22.0	54	--

01658460 - QUANTICO CR BL CAMP 4 NR DUMFRIES VA (LAT 38 35 23 LONG 077 21 26)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
MAR , 1983					
17...	1410	5.4	10.0	46	--
APR					
20...	1300	11	10.0	44	--
MAY					
24...	1626	6.6	20.5	44	--
JUN					
28...	1430	1.2	29.5	49	5
JUL					
18...	1420	.27	29.0	53	--
SEP					
20...	1145	.05	21.0	73	--

01658475 - QUANTICO CREEK ABOVE PYRITE MINE NR DUMFRIES (LAT 38 34 35 LONG 077 21 05)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
MAR , 1983					
17...	1110	4.6	9.0	51	--
APR					
20...	1030	11	7.0	45	--
MAY					
25...	0830	5.9	15.0	50	--
JUN					
28...	1030	1.0	22.0	58	2
JUL					
19...	0905	.19	24.0	87	--
SEP					
23...	0940	--	13.5	47	--

01658510 - SF QUANTICO CR TRB 7 TRB NR INDEPENDENT HILL VA (LAT 38 35 53 LONG 077 25 08)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
APR , 1983					
19...	0935	.11	8.5	28	--
MAY					
25...	1430	.13	16.5	27	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
POTOMAC RIVER BASIN--CONTINUED					
01658603 - SF QUANTICO CR BL TRIB 1 NR JOPLIN VA (LAT 38 34 34 LONG 077 22 47)					
APR , 1983 19...	1143	19	9.0	35	--
MAY 24...	1500	13	18.0	41	--
JUN 28...	1120	2.8	22.0	44	2
JUL 18...	1220	1.3	24.0	48	--
AUG 23...	1025	.15	23.0	52	--
SEP 20...	1100	.37	20.0	50	--
01658610 - SF QUANTICO CR AT PARK RD NR JOPLIN VA (LAT 38 34 03 LONG 077 21 54)					
APR , 1983 19...	1430	27	9.0	38	--
MAY 24...	1600	16	18.0	44	--
JUN 28...	1005	2.3	22.0	48	3
JUL 18...	1005	1.1	20.5	58	--
AUG 23...	1000	.18	22.0	62	--
SEP 20...	1020	.34	19.0	54	--
01658615 - MARY BIRD BR AT TAYLOR FARM RD NR JOPLIN VA (LAT 38 35 36 LONG 077 22 36)					
MAR , 1983 30...	1150	.15	8.0	38	--
APR 19...	1020	.26	8.5	32	--
MAY 24...	1210	.08	15.0	31	--
JUN 28...	1358	.01	20.0	31	5
01658530 - SF QUANTICO CR AT MAWAVI RD NR JOPLIN VA (LAT 38 35 07 LONG 077 24 46)					
AUG , 1983 23...	1140	.09	22.0	41	--
SEP 20...	1345	.15	21.0	47	--
01658540 - SF QUANTICO CR TRIB NO 8 AT MOUTH NR JOPLIN VA (LAT 38 34 47 LONG 077 24 47)					
APR , 1983 19...	1400	.59	10.0	30	--
MAY 24...	1350	.29	16.0	30	--
JUN 28...	1025	.12	19.0	33	3
JUL 18...	1025	.05	20.0	38	--
AUG 23...	0940	.02	23.0	38	--
SEP 20...	1015	.03	20.0	35	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SEDI-MENT, SUS-PENDED (MG/L)
POTOMAC RIVER BASIN--CONTINUED					
01658601 - SF QUANTICO CR TRIB 1 AT TRAIL 10 NR JOPLIN VA (LAT 38 35 00 LONG 077 23 13)					
APR , 1983					
19...	1303	2.2	10.0	34	--
MAY					
24...	1330	1.3	17.0	35	--
JUN					
28...	1300	.21	22.0	38	5
JUL					
18...	1415	.10	24.0	50	--
SEP					
20...	1200	.01	20.0	63	--
01658625 - S.F. QUANTICO CK TRIB NO 5 NR DUMFRIES, VA. (LAT 38 33 49 LONG 077 21 28)					
APR , 1983					
19...	1300	.55	10.0	65	--
MAY					
24...	1000	.37	15.0	66	--
JUN					
28...	0840	.69	20.0	66	18
JUL					
18...	0930	.06	21.0	65	--
SEP					
20...	0930	.03	18.0	65	--
01658651 - S.F. QUANTICO CK TRIB NO 7 NR DUMFRIES, VA. (LAT 38 34 21 LONG 077 20 55)					
MAR , 1983					
29...	1025	.07	7.5	100	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAMES RIVER BASIN									
02037620 - WAYSIDE SPRING AT RICHMOND, VA. (LAT 37 31 26 LONG 077 29 03)									
MAR , 1983									
24...	1625	<.01	105	--	15.0	14	11	2.3	2.0
ROANOKE RIVER BASIN									
02058300 - TOMAHAWK CREEK NEAR CLIMAX, VA (LAT 36 52 57 LONG 079 32 25)									
SEP , 1983									
27...	1110	8.8	49	6.0	15.0	13	0	2.8	1.4
02060400 - SYCAMORE CREEK AT SYCAMORE, VA (LAT 37 01 25 LONG 079 21 24)									
SEP , 1983									
28...	0830	1.7	41	6.5	11.5	14	0	3.4	1.3
02075020 - FALL CREEK AT RT 719 NR DANVILLE, VA (LAT 36 40 42 LONG 079 24 13)									
SEP , 1983									
28...	1115	.36	98	7.6	15.0	34	0	7.8	3.5

< Actual value is known to be less than the value shown.

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
JAMES RIVER BASIN--CONTINUED									
02037620 - WAYSIDE SPRING AT RICHMOND, VA. (LAT 37 31 26 LONG 077 29 03)									
MAR , 1983									
24...	13	1.4	3.0	<5.0	19	--	--	3.7	--
ROANOKE RIVER BASIN--CONTINUED									
02058300 - TOMAHAWK CREEK NEAR CLIMAX, VA (LAT 36 52 57 LONG 079 32 25)									
SEP , 1983									
27...	3.6	1.8	20	2.4	2.6	14	41	.22	<10
02060400 - SYCAMORE CREEK AT SYCAMORE, VA (LAT 37 01 25 LONG 079 21 24)									
SEP , 1983									
28...	2.1	1.0	18	1.9	2.3	10	33	.24	<10
02075020 - FALL CREEK AT RT 719 NR DANVILLE, VA (LAT 36 40 42 LONG 079 24 13)									
SEP , 1983									
28...	7.1	1.4	43	4.2	4.1	22	76	.25	<10

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ARSENIC TOTAL (UG/L AS AS)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
JAMES RIVER BASIN--CONTINUED								
02037620 - WAYSIDE SPRING AT RICHMOND, VA. (LAT 37 31 26 LONG 077 29 03)								
MAR , 1983 24...	--	--	--	--	--	--	--	--
ROANOKE RIVER BASIN--CONTINUED								
02058300 - TOMAHAWK CREEK NEAR CLIMAX, VA (LAT 36 52 57 LONG 079 32 25)								
SEP , 1983 27...	1	<10	1200	41	<100	100	46	20
02060400 - SYCAMORE CREEK AT SYCAMORE, VA (LAT 37 01 25 LONG 079 21 24)								
SEP , 1983 28...	<1	<10	950	100	<100	50	29	60
02075020 - FALL CREEK AT RT 719 NR DANVILLE, VA (LAT 36 40 42 LONG 079 24 13)								
SEP , 1983 28...	1	10	620	170	<100	70	24	40

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WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
ROANOKE RIVER BASIN--CONTINUED									
02075275 - SANDY CR (RIVER) AT U.S. HWY 58 NR RINGGOLD, VA (LAT 36 34 50 LONG 079 13 31)									
SEP , 1983									
28...	1015	2.3	100	7.6	13.0	30	0	7.6	2.6
02076220 - BEARSKIN CREEK AT RT 612 NEAR CHATHAM, VA (LAT 36 48 00 LONG 079 28 23)									
SEP , 1983									
27...	1245	4.4	45	7.7	15.0	11	0	2.7	1.1
02076260 - WHITE OAK CREEK NEAR DRY FORK, VA (LAT 36 44 54 LONG 079 25 14)									
SEP , 1983									
27...	1615	--	51	7.1	16.5	14	0	3.2	1.5
02076320 - CHERRYSTONE CREEK AT CHATHAM, VA (LAT 36 48 13 LONG 079 23 37)									
SEP , 1983									
27...	1415	5.7	60	7.5	14.5	17	0	4.2	1.6
02076500 - GEORGES CREEK NEAR GRETNA, VA. (LAT 36 56 11 LONG 079 18 42)									
SEP , 1983									
27...	1510	3.2	69	6.4	14.5	14	0	3.3	1.3
02076550 - SHOCKOE CREEK NEAR JAVA, VA (LAT 36 52 02 LONG 079 13 52)									
SEP , 1983									
28...	1050	.20	50	6.2	12.0	10	0	2.6	.9
02076600 - STINKING RIVER NEAR MOUNT AIRY, VA (LAT 36 55 56 LONG 076 14 30)									
SEP , 1983									
27...	1555	6.4	41	6.5	15.0	11	0	2.6	1.1
02076650 - BANISTER RIVER AT RT 640 NR MOUNT AIRY, VA (LAT 36 54 39 LONG 079 11 00)									
SEP , 1983									
28...	1430	46	47	8.0	16.0	12	0	3.0	1.2
02076740 - ELKHORN CREEK NEAR RICEVILLE, VA (LAT 36 52 09 LONG 079 09 04)									
SEP , 1983									
28...	1330	3.5	76	7.1	14.0	21	0	5.6	1.8

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

ROANOKE RIVER BASIN--CONTINUED

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)
02075275 - SANDY CR (RIVER) AT U.S. HWY 58 NR RINGGOLD, VA (LAT 36 34 50 LONG 079 13 31)									
SEP , 1983									
28...	7.9	2.9	38	4.5	6.2	24	79	.13	10
02076220 - BEARSKIN CREEK AT RT 612 NEAR CHATHAM, VA (LAT 36 48 00 LONG 079 28 23)									
SEP , 1983									
27...	3.6	1.9	19	2.4	3.3	15	42	.12	<10
02076260 - WHITE OAK CREEK NEAR DRY FORK, VA (LAT 36 44 54 LONG 079 25 14)									
SEP , 1983									
27...	4.1	2.1	21	1.9	3.0	16	45	.11	30
02076320 - CHERRYSTONE CREEK AT CHATHAM, VA (LAT 36 48 13 LONG 079 23 37)									
SEP , 1983									
27...	4.3	2.1	22	2.6	3.9	13	45	.47	<10
02076500 - GEORGES CREEK NEAR GRETNA, VA. (LAT 36 56 11 LONG 079 18 42)									
SEP , 1983									
27...	7.2	1.7	17	4.5	6.6	11	46	.91	10
02076550 - SHOCKOE CREEK NEAR JAVA, VA (LAT 36 52 02 LONG 079 13 52)									
SEP , 1983									
28...	5.9	1.4	20	2.9	4.0	20	50	.21	10
02076600 - STINKING RIVER NEAR MOUNT AIRY, VA (LAT 36 55 56 LONG 076 14 30)									
SEP , 1983									
27...	3.3	1.1	18	1.5	2.3	15	38	.11	<10
02076650 - BANISTER RIVER AT RT 640 NR MOUNT AIRY, VA (LAT 36 54 39 LONG 079 11 00)									
SEP , 1983									
28...	4.4	1.6	20	3.1	3.1	14	43	.10	<10
02076740 - ELKHORN CREEK NEAR RICEVILLE, VA (LAT 36 52 09 LONG 079 09 04)									
SEP , 1983									
28...	6.5	1.4	31	4.4	3.0	26	68	.51	<10

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WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	ARSENIC TOTAL (UG/L AS AS)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
ROANOKE RIVER BASIN--CONTINUED								
02075275 - SANDY CR (RIVER) AT U.S. HWY 58 NR RINGGOLD, VA (LAT 36 34 50 LONG 079 13 31)								
SEP , 1983								
28...	1	<10	1600	590	<100	130	120	30
02076220 - BEARSKIN CREEK AT RT 612 NEAR CHATHAM, VA (LAT 36 48 00 LONG 079 28 23)								
SEP , 1983								
27...	1	10	680	100	<100	30	25	40
02076260 - WHITE OAK CREEK NEAR DRY FORK, VA (LAT 36 44 54 LONG 079 25 14)								
SEP , 1983								
27...	1	<10	3100	450	<100	110	110	60
02076320 - CHERRYSTONE CREEK AT CHATHAM, VA (LAT 36 48 13 LONG 079 23 37)								
SEP , 1983								
27...	1	<10	1000	79	<100	80	69	30
02076500 - GEORGES CREEK NEAR GRETNA, VA. (LAT 36 56 11 LONG 079 18 42)								
SEP , 1983								
27...	1	<10	780	180	<100	20	14	10
02076550 - SHOCKOE CREEK NEAR JAVA, VA (LAT 36 52 02 LONG 079 13 52)								
SEP , 1983								
28...	1	<10	560	130	<100	60	45	10
02076600 - STINKING RIVER NEAR MOUNT AIRY, VA (LAT 36 55 56 LONG 076 14 30)								
SEP , 1983								
27...	1	<10	760	140	<100	50	32	40
02076650 - BANISTER RIVER AT RT 640 NR MOUNT AIRY, VA (LAT 36 54 39 LONG 079 11 00)								
SEP , 1983								
28...	1	<10	870	240	<100	20	5	10
02076740 - ELKHORN CREEK NEAR RICEVILLE, VA (LAT 36 52 09 LONG 079 09 04)								
SEP , 1983								
28...	1	<10	1300	810	<100	60	47	20

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WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
BIG SANDY RIVER BASIN									
03208865 - BAD CREEK AT POUND,VA (LAT 37 08 37 LONG 082 37 16)									
AUG , 1983									
22...	1330	--	374	8.3	24.0	130	38	37	8.4
03208870 - BAD CREEK TRIB AT POUND, VA. (LAT 37 08 30 LONG 082 37 21)									
AUG , 1983									
08...	1525	.01	62	5.8	21.0	22	4	5.4	2.0
03208874 - RIGHT FORK BEARPEN CREEK NR POUND VA (LAT 37 09 50 LONG 082 34 42)									
AUG , 1983									
22...	1115	.14	77	7.3	17.0	33	6	9.6	2.3
03208880 - JOHNSON HOLLOW TRIB NR POUND, VA. (LAT 37 10 42 LONG 082 33 55)									
AUG , 1983									
09...	0900	.05	63	7.3	17.0	25	1	6.6	2.1

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)
BIG SANDY RIVER BASIN--CONTINUED									
03208865 - BAD CREEK AT POUND VA (LAT 37 08 37 LONG 082 37 16)									
AUG , 1983									
22...	16	2.2	89	24	38	.20	4.5	184	52
03208870 - BAD CREEK TRIB AT POUND, VA. (LAT 37 08 30 LONG 082 37 21)									
AUG , 1983									
08...	2.3	1.3	18	8.7	1.9	<.10	5.1	38	210
03208874 - RIGHT FORK BEARPEN CREEK NR POUND VA (LAT 37 09 50 LONG 082 34 42)									
AUG , 1983									
22...	1.2	1.1	27	9.5	1.0	<.10	4.7	46	40
03208880 - JOHNSON HOLLOW TRIB NR POUND, VA. (LAT 37 10 42 LONG 082 33 55)									
AUG , 1983									
09...	2.1	1.1	24	6.1	.7	<.10	6.7	40	34

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

TENNESSEE RIVER BASIN

03473010 - SOUTH FORK HOLSTON R AT ALVARADO NR DAMASCUS, VA (LAT 36 39 09 LONG 081 53 13)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
DEC , 1982							
08...	1300	495	130	8.0	.70	.66	.010
MAY , 1983							
18...	1115	1150	78	12.5	.30	.35	.010

03474900 - BYERS CREEK NEAR GLADE SPRING, VA (LAT 36 44 22 LONG 081 47 57)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
DEC , 1982							
08...	1545	22	445	11.5	2.7	2.6	.030
MAY , 1983							
17...	1015	29	385	11.0	1.8	1.8	.040

03475610 - MIDDLE FORK HOLSTON RIVER NEAR OSCEOLA, VA (LAT 36 41 34 LONG 081 53 38)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
DEC , 1982							
08...	1430	287	368	9.0	1.9	1.9	.040
MAY , 1983							
17...	1710	973	180	16.5	.70	.66	.100

03475620 - FIFTEENMILE CREEK NEAR GREEN SPRING, VA (LAT 36 38 51 LONG 081 57 44)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
DEC , 1982							
08...	1050	21	409	8.0	2.4	2.4	.050
MAY , 1983							
17...	1420	50	275	13.5	1.2	1.2	.050

03475710 - SPRING CREEK NEAR GREEN SPRING, VA (LAT 36 36 28 LONG 082 02 29)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	TEMPER-ATURE (DEG C)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)
DEC , 1982							
08...	0945	23	404	8.5	2.2	2.1	<.010
MAY , 1983							
17...	1250	32	250	13.0	1.0	.98	.040

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	SEDIMENT, SUSPENDED (MG/L)
TENNESSEE RIVER BASIN--CONTINUED							
03473010 - SOUTH FORK HOLSTON R AT ALVARADO NR DAMASCUS, VA (LAT 36 39 09 LONG 081 53 13)							
DEC , 1982							
08...	.020	.19	.20	.020	.010	<.010	3
MAY , 1983							
18...	<.010	--	<.10	.020	<.010	<.010	16
03474900 - BYERS CREEK NEAR GLADE SPRING, VA (LAT 36 44 22 LONG 081 47 57)							
DEC , 1982							
08...	.030	.37	.40	.070	.030	.040	38
MAY , 1983							
17...	.030	.16	.20	.070	.030	.020	42
03475610 - MIDDLE FORK HOLSTON RIVER NEAR OSCEOLA, VA (LAT 36 41 34 LONG 081 53 38)							
DEC , 1982							
08...	.040	.86	.90	.060	.030	.040	17
MAY , 1983							
17...	.070	.50	.60	.200	.030	.020	136
03475620 - FIFTEENMILE CREEK NEAR GREEN SPRING, VA (LAT 36 38 51 LONG 081 57 44)							
DEC , 1982							
08...	.060	.65	.70	.040	.010	.020	45
MAY , 1983							
17...	.020	.15	.20	.070	.020	.010	45
03475710 - SPRING CREEK NEAR GREEN SPRING, VA (LAT 36 36 28 LONG 082 02 29)							
DEC , 1982							
08...	.020	--	.20	.020	.010	<.010	41
MAY , 1983							
17...	.020	--	<.10	.040	.010	<.010	40

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WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
TENNESSEE RIVER BASIN--CONTINUED									
03524560 - DAVY LAND BRANCH NR DUNGANNON VA (LAT 36 52 07 LONG 082 30 53)									
AUG , 1983 23...	1400	--	56	6.9	18.5	22	4	4.9	2.4
03524575 - CORDER BRANCH SPRING NR COEBURN VA (LAT 36 53 08 LONG 082 29 50)									
AUG , 1983 11...	0900	<.01	43	6.4	16.0	18	4	4.0	1.9
03524580 - CORDER BRANCH NR COEBURN VA (LAT 36 53 10 LONG 082 28 32)									
AUG , 1983 23...	1455	--	66	6.7	19.5	25	0	5.4	2.7
03524600 - LAUREL BRANCH NR DUGANNON, VA. (LAT 36 52 42 LONG 082 28 00)									
AUG , 1983 11...	1000	.01	41	6.5	18.0	17	0	3.7	2.0
03524815 - OSBORN ROCK SPRING NR NORTON VA (LAT 36 53 46 LONG 082 35 06)									
AUG , 1983 22...	1545	<.01	21	5.2	13.0	4	3	.9	.4
03524820 - BARK CAMP BRANCH NR TACOMA VA (LAT 36 53 14 LONG 082 34 27)									
AUG , 1983 23...	0930	.04	24	4.5	14.5	3	3	.7	.4
03524850 - CHIMNEY ROCK FORK NEAR KA, VA. (LAT 36 50 20 LONG 082 35 42)									
AUG , 1983 17...	1100	.11	66	6.9	16.5	8	0	1.7	.9
03524860 - COALPIT BRANCH NR KA VA (LAT 36 49 32 LONG 082 36 49)									
AUG , 1983 17...	1240	.02	28	6.2	19.5	8	1	1.7	1.0

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WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	IRON, DIS-SOLVED (UG/L AS FE)
TENNESSEE RIVER BASIN--CONTINUED									
03524560 - DAVY LAND BRANCH NR DUNGANNON VA (LAT 36 52 07 LONG 082 30 53)									
AUG , 1983 23...	1.6	1.2	18	9.5	1.8	<.10	5.0	39	1700
03524575 - CORDER BRANCH SPRING NR COEBURN VA (LAT 36 53 08 LONG 082 29 50)									
AUG , 1983 11...	1.1	.6	14	2.9	.7	<.10	6.2	26	23
03524580 - CORDER BRANCH NR COEBURN VA (LAT 36 53 10 LONG 082 28 32)									
AUG , 1983 23...	2.5	1.1	28	9.3	.9	<.10	5.7	45	160
03524600 - LAUREL BRANCH NR DUGANNON, VA. (LAT 36 52 42 LONG 082 28 00)									
AUG , 1983 11...	1.2	.7	17	4.1	.8	<.10	5.1	28	79
03524815 - OSBORN ROCK SPRING NR NORTON VA (LAT 36 53 46 LONG 082 35 06)									
AUG , 1983 22...	.6	.3	1.0	4.8	.5	<.10	3.2	11	25
03524820 - BARK CAMP BRANCH NR TACOMA VA (LAT 36 53 14 LONG 082 34 27)									
AUG , 1983 23...	.6	.2	.0	5.3	.5	<.10	3.0	11	13
03524850 - CHIMNEY ROCK FORK NEAR KA, VA. (LAT 36 50 20 LONG 082 35 42)									
AUG , 1983 17...	10	.8	16	4.2	9.8	<.10	4.6	42	5
03524860 - COALPIT BRANCH NR KA VA (LAT 36 49 32 LONG 082 36 49)									
AUG , 1983 17...	.7	1.0	7.0	4.8	.7	<.10	5.7	20	14

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WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
TENNESSEE RIVER BASIN--CONTINUED									
03524890 - DEVIL FORK NEAR KA, VA. (LAT 36 49 09 LONG 082 37 49)									
AUG , 1983									
17...	1345	.06	20	5.4	18.0	5	2	.9	.6
03524895 - STRAIGHT FORK SPRING AT KA VA (LAT 36 49 02 LONG 082 37 27)									
AUG , 1983									
23...	1210	--	52	6.4	13.5	14	0	3.2	1.5
03525050 - COVE CREEK NR STANLEYTOWN VA (LAT 36 47 42 LONG 082 41 49)									
AUG , 1983									
17...	1600	.03	59	5.9	18.0	23	2	6.5	1.7
03525060 - STINKING CREEK NR STANLEYTOWN VA (LAT 36 47 37 LONG 082 41 43)									
AUG , 1983									
17...	1530	.02	93	6.7	18.0	40	0	12	2.5
03525070 - DRY CREEK NR STANLEYTOWN, VA. (LAT 36 46 57 LONG 082 42 23)									
AUG , 1983									
18...	0830	.03	45	5.8	17.5	14	2	2.9	1.7
03525150 - STOCK CREEK NR MABE VA (LAT 36 47 28 LONG 082 44 39)									
AUG , 1983									
18...	0950	.12	58	5.8	18.0	22	2	6.1	1.6
03525170 - SHUPE BRANCH NR MABE VA (LAT 36 47 15 LONG 082 44 26)									
AUG , 1983									
18...	1030	.04	29	5.7	17.0	9	2	1.8	1.2

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	IRON, DIS- SOLVED (UG/L AS FE)
TENNESSEE RIVER BASIN--CONTINUED									
03524890 - DEVIL FORK NEAR KA, VA. (LAT 36 49 09 LONG 082 37 49)									
AUG , 1983									
17...	.8	.5	3.0	4.4	.6	<.10	4.6	14	<3
03524895 - STRAIGHT FORK SPRING AT KA VA (LAT 36 49 02 LONG 082 37 27)									
AUG , 1983									
23...	5.4	.8	22	4.2	1.9	<.10	5.6	36	150
03525050 - COVE CREEK NR STANLEYTOWN VA (LAT 36 47 42 LONG 082 41 49)									
AUG , 1983									
17...	.9	.9	21	5.4	.7	<.10	4.6	33	<3
03525060 - STINKING CREEK NR STANLEYTOWN VA (LAT 36 47 37 LONG 082 41 43)									
AUG , 1983									
17...	1.1	.9	41	5.6	.7	<.10	5.7	53	<3
03525070 - DRY CREEK NR STANLEYTOWN, VA. (LAT 36 46 57 LONG 082 42 23)									
AUG , 1983									
18...	1.3	1.1	12	7.1	.6	<.10	6.9	29	<3
03525150 - STOCK CREEK NR MABE VA (LAT 36 47 28 LONG 082 44 39)									
AUG , 1983									
18...	1.2	.9	20	6.3	2.4	<.10	5.5	36	210
03525170 - SHUPE BRANCH NR MABE VA (LAT 36 47 15 LONG 082 44 26)									
AUG , 1983									
18...	.8	.8	7.0	4.8	.6	<.10	4.2	18	50

< Actual value is known to be less than the value shown.

ACCOMACK COUNTY

375622075280101. Local number, 67M2.
LOCATION.--Lat 37°56'23", long 75°28'02", Hydrologic Unit 02060010, Wallops Flight Center well B31. Owner: National Aeronautics and Space Administration (formerly U.S. Naval Air Station, Wallops Island).
AQUIFER.--Columbia group sand of Pleistocene age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in, depth 60 ft, screen depth unknown.
DATUM.--Altitude of land-surface datum is 35 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.38 ft above land-surface datum. Measuring point reported as 6.09 ft above land-surface datum from 1963 to 1975.
REMARKS.--Records furnished by the National Aeronautics and Space Administration.
PERIOD OF RECORD.--May 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.82 ft below land-surface datum, May 9, 1963; lowest measured, 25.22 ft below land-surface datum, Dec. 1, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	24.32	JAN 3	25.05	APR 12	22.87	JUL 7	22.02
NOV 1	24.72	FEB 1	24.92	MAY 9	22.22	AUG 9	22.22
DEC 2	24.92	MAR 2	24.32	JUN 6	22.52	SEP 9	22.42

ALBEMARLE COUNTY

380333078264801. Local number, 43N1.
LOCATION.--Lat 38°03'33", long 78°26'48", Hydrologic Unit 02080204, at Key West Subdivision, Charlottesville. Owner: Key West Development Corporation.
AQUIFER.--Lynchburg formation of Precambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 409 ft, cased to 52 ft, open hole 52 to 409 ft.
DATUM.--Altitude of land-surface datum is 345 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.3 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 28. Manual measurements published from June 1974 to April 1981.
PERIOD OF RECORD.--February 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.08 ft below land-surface datum, Apr. 12, 1983; lowest recorded, 22.10 ft below land-surface datum, Nov. 30, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	16.71	16.60	16.40	16.48	15.81	14.77	11.58	-	-	-	15.71	15.86
10	16.71	16.70	16.58	16.40	15.87	14.50	11.60	-	-	-	15.60	16.03
15	16.70	16.63	16.49	16.38	15.80	14.50	-	-	-	-	15.43	16.24
20	16.76	16.65	15.91	16.47	14.89	14.00	-	-	13.27	15.22	15.50	16.29
25	16.73	16.70	16.21	16.21	14.50	14.07	-	-	-	15.30	15.71	16.43
EOM	16.60	16.60	16.35	16.18	14.62	13.28	-	-	-	15.30	15.80	16.47

WTR YR 1983 HIGHEST 10.08 APR 12, 1983 LOWEST 16.77 OCT 24, 1982

APPOMATTOX COUNTY

372133078493701. Local number, 40G1.
LOCATION.--Lat 37°21'33", long 78°49'37", Hydrologic Unit 02080207, in the town of Appomattox. Owner: Town of Appomattox.
AQUIFER.--Metamorphic rock of uncertain age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in, depth 288 ft, cased to 40 ft, open hole 40 to 288 ft.
DATUM.--Altitude of land-surface datum is 860 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 12.
PERIOD OF RECORD.--October 1967 to current year. Unpublished record available in May 1949.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.78 ft below land-surface datum, June 13, 1973; lowest recorded, 58.21 ft below land-surface datum, Nov. 17, 18, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	53.40	53.51	53.84	53.80	55.13	54.39	53.26	52.10	50.69	51.12	49.50	49.81
10	53.25	53.86	54.20	54.08	54.81	54.15	52.93	51.87	50.77	49.78	49.60	50.39
15	53.30	53.90	-	54.18	54.60	54.20	53.00	51.68	50.40	49.97	49.60	50.41
20	53.46	53.92	54.23	54.20	54.70	53.90	52.73	51.60	49.90	49.83	49.62	50.36
25	53.09	-	-	54.28	54.38	53.91	52.42	51.20	49.95	49.65	49.88	50.30
EOM	53.28	-	-	54.15	54.37	53.63	52.50	50.88	50.79	49.47	49.86	50.90

WTR YR 1983 HIGHEST 48.50 AUG 8, 1983 LOWEST 55.13 FEB 5, 1983

APPOMATTOX COUNTY--Continued

372514078394301. Local number, 41H2.
LOCATION.--Lat 37°25'14", long 78°39'43", Hydrologic Unit 02080207, 1 mi south of intersection of State Highway 636 on the east side of State Highway 640. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Paleozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in to 68 ft, 1.25 in 68 to 73 ft, depth 73 ft, screened 68 to 73 ft.
DATUM.--Altitude of land-surface datum is 640 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 1.5 ft above land-surface datum.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.99 ft below land-surface datum, May 20, 1973; lowest measured, 49.41 ft below land-surface datum, Mar. 30, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 13	46.12	MAR 22	46.20	SEP 6	42.92
JAN 24	46.51	JUL 18	42.60		

ARLINGTON COUNTY

385346077073701. Local number, 53V1.
LOCATION.--Lat 38°53'46", long 77°07'37", Hydrologic Unit 02070010, at Langston School, 4854 Lee Highway, Arlington. Owner: Arlington County School Board.
AQUIFER.--Brandywine formation of Pleistocene age and Bryn Mawr (?) gravel of Pliocene (?) age, overlying the Sykesville formation of Precambrian age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in, depth 35 ft, terracotta casing.
DATUM.--Altitude of land-surface datum is 410 ft National Geodetic Vertical Datum of 1929. Measuring point: Inner flange of manhole at land-surface datum.
PERIOD OF RECORD.--October 1931 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.74 ft below land-surface datum, Apr. 20, 1935; lowest measured, 34.81 ft below land-surface datum, Dec. 5, 1931.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	28.75	MAR 31	25.40	JUL 1	21.26
JAN 28	28.43	MAY 27	21.30	SEP 28	24.51

385253077042301. Local number, 54V3.
LOCATION.--Lat 38°52'53", long 77°04'23", Hydrologic Unit 02070010, at Arlington National Cemetery. Owner: NPS National Capitol Parks.
AQUIFER.--Terrace gravels of Holocene age and sand of Early Cretaceous age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 48 in, depth 50 ft.
DATUM.--Altitude of land-surface datum is 205 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of brick and stone casing, 3 ft above land-surface datum.
PERIOD OF RECORD.--January 1958 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.34 ft below land-surface datum, June 26, 1978; lowest measured, 44.90 ft below land-surface datum, Mar. 4, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 29	43.77	MAR 31	42.78	JUL 1	41.54
JAN 28	43.86	MAY 27	41.37	SEP 29	42.32

BUCKINGHAM COUNTY

372541078392101. Local number, 41H1.
LOCATION.--Lat 37°25'41", long 78°39'21", Hydrologic Unit 02080207, 0.45 mi southeast of State Highway 636. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Paleozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in to 83 ft, diameter 1.25 in 83 to 88 ft, depth 88 ft, screened 83 to 88 ft.
DATUM.--Altitude of land-surface datum is 660 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.20 ft above land-surface datum.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.95 ft below land-surface datum, May 20, 1973; lowest measured, 50.41 ft below land-surface datum, Dec. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	46.19	JAN 24	47.30	MAY 20	43.54	SEP 6	43.88
DEC 13	47.10	MAR 22	46.57	JUL 18	42.15		

BUCKINGHAM COUNTY--Continued

372608078404601. Local number, 41H3.
LOCATION.--Lat 37°26'08", long 78°40'46", Hydrologic Unit 02080207, 0.85 mi west of Ranger Headquarters on south side of dirt road off of State Highway 636. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Paleozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in to 49 ft, diameter 1.25 in 49 to 54 ft, depth 54 ft, screened 49 to 54 ft.
DATUM.--Altitude of land-surface datum is 683.8 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.3 ft above land-surface datum.
REMARKS.--Prior to Oct. 1, 1981, well was reported as being located in Appomattox County.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.31 ft below land-surface datum, Apr. 12, 1973; lowest measured, 28.30 ft below land-surface datum, Oct. 17, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	21.15	JAN 24	20.13	MAY 20	15.84	SEP 6	20.36
DEC 13	20.27	MAR 22	18.44	JUL 18	17.51		

372519078374001. Local number, 41H4.
LOCATION.--Lat 37°25'19", long 78°37'40", Hydrologic Unit 02080207, 0.65 mi northeast of Holiday Creek and 0.85 mi southeast of State Highway 636 on State Highway 614. Owner: U.S. Geological Survey.
AQUIFER.--Candler formation of Plaeozoic age.
WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in to 72 ft, diameter 1.25 in 72 to 77 ft, depth 77 ft, screened 72 to 77 ft.
DATUM.--Altitude of land-surface datum is 647 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.4 ft above land-surface datum.
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available March 1971 through September 1977.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.45 ft below land-surface datum, May 1, 1980; lowest measured, 44.29 ft below land-surface datum, Oct. 20, 21, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 1	40.24	JAN 24	39.85	MAY 20	34.43	SEP 6	38.80
DEC 13	40.56	MAR 22	38.02	JUL 18	35.64		

CITY OF COLONIAL HEIGHTS

371644077244601. Local number, 51G1.
LOCATION.--Lat 37°16'44", long 77°24'46", Hydrologic Unit 02080207, at Matoaka Manor, Colonial Heights. Owner: Kenneth Daul.
AQUIFER.--Petersburg granite of Late Paleozoic age.
WELL CHARACTERISTICS.--Drilled water well, diameter 6 in, depth 100 ft, cased to 50 ft, open hole 50 to 100 ft.
DATUM.--Altitude of land-surface datum is 57.30 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft above land-surface datum.
PERIOD OF RECORD.--October 1939 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft below land-surface datum, Jan. 26, 1978; lowest measured, 19.26 ft below land-surface datum, Dec. 3, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	16.77	JAN 30	14.45	APR 27	11.77	JUL 27	15.84
NOV 29	16.61	FEB 24	13.12	MAY 26	13.52	AUG 25	16.64
DEC 27	16.61	MAR 29	12.11	JUN 29	14.85	SEP 29	17.07
JAN 27	14.69						

FAIRFAX COUNTY

384518077163501. Local number, 52U4.
LOCATION.--Lat 38°45'18", long 77°16'35", Hydrologic Unit 02070010, east of intersection of State Highways 641 and 643, Springfield. Owner: Sydenstricker Church.
AQUIFER.--Granite of undetermined age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in, depth 28 ft.
DATUM.--Altitude of land-surface datum is 340 ft National Geodetic Vertical Datum of 1929. Measuring point: Hole in cement platform, 0.67 ft above land-surface datum.
PERIOD OF RECORD.--May 1957 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.54 ft below land-surface datum, Apr. 30, 1973; lowest measured, 27.57 ft below land-surface datum, Nov. 30, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	22.92	JAN 28	22.73	APR 28	17.42	JUL 25	18.82
NOV 30	23.34	FEB 25	21.90	MAY 27	16.50	AUG 25	20.78
DEC 26	23.12	MAR 31	20.40	JUN 30	17.48	SEP 29	22.22

FAIRFAX COUNTY--Continued

385638077220101. Local number, 52V2.
LOCATION.--Lat 38°56'58", long 77°22'01", Hydrologic Unit 02070008, at U.S. Geological Survey, National Center, Reston. Owner: U.S. Geological Survey.
AQUIFER.--Manassas sandstone of Triassic age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 8 in, depth 205 ft, cased to 35 ft, open hole 35 to 205 ft.
DATUM.--Altitude of land-surface datum is 390 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.
PERIOD OF RECORD.--October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.48 ft below land-surface datum, Apr. 30, May 1, 1980; lowest recorded, 17.30 ft below land-surface datum, Oct. 24, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.83	15.51	14.81	14.40	13.37	-	8.85	8.74	10.78	12.07	14.62	16.35
10	15.79	15.45	14.90	-	13.19	10.30	8.46	9.80	11.00	-	14.92	16.61
15	15.74	-	14.87	-	-	9.75	-	10.18	11.40	-	15.15	16.77
20	15.66	-	14.10	-	-	9.98	-	9.02	11.73	-	15.44	16.95
25	15.68	-	14.28	-	-	9.04	-	9.16	11.70	-	15.78	16.98
EOM	15.66	-	14.44	-	-	8.72	-	10.00	11.93	-	16.06	17.05

WTR YR 1983 HIGHEST 8.16 MAY 2, 1983 LOWEST 17.05 SEP 30, 1983

CITY OF FRANKLIN

364047076552401. Local number, 55B22.
LOCATION.--Lat 36°40'47", long 76°55'24", Hydrologic Unit 03010202, at 5th Avenue and Middle Street, Franklin. Owner: City of Franklin.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Jetted observation water well, diameter 4 in, depth 354 ft, screened 335 to 354 ft.
DATUM.--Altitude of land-surface datum is 21.24 ft National Geodetic Vertical Datum of 1929. Measuring point: Top edge of manhole at land-surface datum.
REMARKS.--Water level affected by local pumpage.
PERIOD OF RECORD.--June 1942 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.50 ft below land-surface datum, June 25, 1942; lowest measured, 190.01 ft below land-surface datum, June 12, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	181.29	JAN 11	176.04	MAY 12	177.44
NOV 12	180.23	FEB 15	179.08	JUN 10	173.79
DEC 10	179.44	MAR 11	177.75	AUG 4	178.80

HALIFAX COUNTY

364550078562301. Local number, 39C1.
LOCATION.--Lat 36°45'50", long 78°56'23", Hydrologic Unit 03010105, in the town of Halifax. Owner: Town of Halifax.
AQUIFER.--Granite and gneiss of uncertain age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in, depth 302 ft, cased to 52 ft, open hole 52 to 302 ft.
DATUM.--Altitude of land-surface datum is 380 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.20 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 11.
PERIOD OF RECORD.--October 1968 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.28 ft below land-surface datum, June 8, 1980; lowest recorded, 45.09 ft below land-surface datum, Dec. 30, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	40.40	40.59	40.46	40.51	40.42	40.15	39.67	38.83	38.09	37.72	37.70	38.00
10	40.42	40.60	40.60	40.40	40.30	39.97	39.40	38.71	38.07	37.70	37.70	38.09
15	40.39	40.57	40.58	40.33	40.29	39.96	39.37	38.51	37.90	37.67	37.77	38.20
20	40.50	40.53	40.43	40.48	40.33	39.93	39.27	38.40	37.87	37.69	37.78	38.20
25	40.44	40.63	40.55	40.37	40.22	39.90	39.15	38.30	37.80	37.66	37.98	38.32
EOM	40.51	40.55	40.53	40.32	40.20	39.80	39.00	38.11	37.80	37.68	37.90	38.32

WTR YR 1983 HIGHEST 37.59 JUL 21, 1983 LOWEST 40.66 DEC 8, 1982

CITY OF HOPEWELL

371801077164201. Local number, 52G1.
LOCATION.--Lat 37°18'01", long 77°16'42", Hydrologic Unit 02080206, in the city of Hopewell. Owner: Virginia American Water Corporation.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 300 ft, screen depth unknown.
DATUM.--Altitude of land-surface datum is 50.26 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.34 ft above land-surface datum.
PERIOD OF RECORD.--May 1939 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.56 ft below land-surface datum, Sept. 7, 1979; lowest measured, 56.95 ft below land-surface datum, Aug. 14, 1943.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	35.26	DEC 3	34.57	FEB 4	35.03	APR 15	33.52	JUN 17	34.96	AUG 12	34.86
8	35.24	10	34.33	11	33.96	22	33.36	24	34.83	19	34.90
15	34.96	17	34.95	25	34.06	29	34.20	JUL 1	34.82	26	35.01
22	35.28	24	34.77	MAR 4	31.35	MAY 6	34.91	8	34.86	SEP 2	34.41
29	35.18	31	35.18	11	34.37	13	35.00	15	34.83	9	34.84
NOV 5	35.02	JAN 7	33.96	18	34.48	20	35.03	22	34.91	16	34.96
12	35.14	14	34.91	25	34.00	27	34.79	29	34.97	23	35.01
19	34.65	21	35.02	APR 1	34.72	JUN 3	34.87	AUG 5	35.01	30	34.93
26	34.62	28	35.07	8	34.04	10	34.89				

ISLE OF WIGHT COUNTY

364059076544901. Local number, 55B16.
LOCATION.--Lat 36°40'59", long 76°54'49", Hydrologic Unit 03010202, at lumberyard well, near Franklin. Owner: Union Camp Corporation.
AQUIFER.--Sand of undifferentiated Cretaceous aquifer.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in, depth 305 ft, screened 285 to 305 ft.
DATUM.--Altitude of land-surface datum is 25 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.45 ft above land-surface datum. Measuring point changed from top edge of recorder shelf, 3.50 ft above land-surface datum Nov. 28, 1979.
REMARKS.--Water level affected by local pumpage.
PERIOD OF RECORD.--June 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 99.00 ft below land-surface datum, Dec. 27, 1960; lowest recorded, 195.67 ft below land-surface datum, June 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	188.67	186.90	-	182.70	184.50	184.62	185.17	184.75	180.70	183.79	186.33	185.36
10	188.77	187.15	186.53	183.19	184.71	184.69	184.86	184.62	181.28	186.26	187.38	186.57
15	188.19	187.48	186.42	183.22	184.39	184.72	184.77	184.43	182.16	187.28	187.74	185.85
20	187.01	186.53	185.53	183.55	185.49	184.55	184.26	185.38	182.05	189.16	185.81	185.01
25	187.03	187.14	185.64	183.89	184.83	184.90	183.68	184.29	182.68	188.77	184.59	185.04
EOM	187.23	-	-	184.47	184.66	184.93	183.85	181.07	183.07	186.59	183.71	184.94

WTR YR 1983 HIGHEST 180.27 JUN 7, 8, 1983 LOWEST 189.23 JUL 19, 1983

364116076545001. Local number, 55B35.
LOCATION.--Lat 36°41'16", long 76°54'50", Hydrologic Unit 03010202, near Franklin. Owner: Union Camp Corporation.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in, depth 623 ft, screened 430 to 435 ft, 475 to 480 ft, 580 to 585 ft, 618 to 623 ft.
DATUM.--Altitude of land-surface datum is 32 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 2.15 ft above land-surface datum. Measuring point changed from top of casing, 2 ft above land-surface datum on Oct. 26, 1979.
REMARKS.--Water level affected by local pumpage. Recorder removed Nov. 14, 1971; manual measurements thereafter. Recorder reinstalled Oct. 12, 1982.
PERIOD OF RECORD.--February 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 154.99 ft below land-surface datum, Aug. 23, 1974; lowest measured, 214.15 ft below land-surface datum, June 12, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-	206.36	205.57	202.36	203.13	204.01	204.30	-	200.51	202.50	200.06	203.93
10	-	206.13	205.46	202.32	-	204.14	204.07	-	200.45	203.28	201.20	204.03
15	207.61	206.75	205.61	202.59	-	204.15	203.60	203.55	201.29	202.91	203.66	204.05
20	206.40	205.95	204.82	202.79	204.58	203.89	203.23	204.22	201.35	202.94	203.77	204.13
25	206.24	206.14	203.48	202.80	203.92	203.78	-	203.51	201.57	202.57	202.92	204.11
EOM	206.56	206.31	200.20	202.80	203.97	203.96	-	200.53	202.09	200.05	203.12	204.10

WTR YR 1983 HIGHEST 197.97 DEC 27, 1982 LOWEST 207.61 OCT. 15, 1982

ISLE OF WIGHT--Continued

364125076544801. Local number, 55B36.
LOCATION.--Lat 36°41'25", long 76°54'48", Hydrologic Unit 03010202, near Franklin. Owner: Union Camp Corporation.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in, depth 860 ft, screened 720 to 725 ft, 800 to 805 ft, 855 to 860 ft.
DATUM.--Altitude of land-surface datum is 37 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.56 ft above land-surface datum. Measuring point changed from 4.25 ft above land-surface datum Oct. 25, 1979; published incorrectly as 4.25 ft in 1980 and 1981.
REMARKS.--Water level affected by local pumpage.
PERIOD OF RECORD.--March 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 156.65 ft below land-surface datum, Dec. 27, 1969; lowest measured, 219.29 ft below land-surface datum, May 18, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	184.42	-	186.61	184.85	185.16	185.88	186.14	186.26	186.60	-	187.54	187.74
10	184.85	-	186.64	184.71	185.30	186.04	186.17	186.33	186.58	-	187.52	187.42
15	185.32	186.25	186.64	184.69	185.38	186.14	186.23	186.47	186.58	187.07	187.51	187.25
20	-	186.36	186.61	184.77	185.41	186.22	186.22	186.58	186.60	187.20	187.55	187.25
25	-	186.47	186.43	184.87	185.62	186.21	186.17	186.60	186.63	187.37	187.63	187.33
EOM	-	186.52	185.53	185.02	185.73	186.15	186.18	186.61	-	187.51	187.67	187.42

WTR YR 1983 HIGHEST 184.12 OCT 1, 1982 LOWEST 187.74 SEP 2-5, 1983

364425076532701. Local number, 55B45.
LOCATION.--Lat 36°44'25", long 76°53'27", Hydrologic Unit 03010202, near Maynards Crossroads. Owner: R. J. Goodrich.
AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in, depth 348 ft, screened 338 to 348 ft.
DATUM.--Altitude of land-surface datum is 37 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum. Measuring point changed from top edge of recorder shelf, 2.20 ft above land-surface datum Apr. 13, 1981.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 33. Recorder removed Sept. 30, 1980; manual measurements thereafter.
PERIOD OF RECORD.--December 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 130.06 ft below land-surface datum, Aug. 15, 1974; lowest measured, 167.00 ft below land-surface datum, Aug. 12, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	158.98	JAN 16	156.25	JUL 26	158.33
NOV 18	159.13	MAR 23	158.42	AUG 31	161.53

JAMES CITY COUNTY

371311076463601. Local number, 56F1.
LOCATION.--Lat 37°13'11", long 76°46'36", Hydrologic Unit 02080206, Colonial Parkway near Jamestown. Owner: U.S. Department of Interior. Colonial National Historical Park.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in, depth 346 ft, screened 336 to 346 ft.
DATUM.--Altitude of land-surface datum is 10 ft National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.15 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 18. Recorder removed Sept. 30, 1980; manual measurements thereafter.
PERIOD OF RECORD.--May 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 43.29 ft below land-surface datum, May 8, 1969; lowest measured, 74.54 ft below land-surface datum, Sept. 23, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	73.10	DEC 20	73.50	MAR 21	70.86	JUL 21	74.30
NOV 9	73.30	JAN 23	71.66	APR 12	71.30	AUG 24	74.50

KING AND QUEEN COUNTY

373126076454101. Local number, 56J11.
LOCATION.--Lat 37°31'26", long 76°45'41", Hydrologic Unit 02080105, at West Point airport. Owner: Chesapeake Corporation.
AQUIFER.--Sand gravel of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 1,254 ft, screened 1,233 to 1,248 ft.
DATUM.--Altitude of land-surface datum is 15 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.6 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 73 through the 1979 water year; by U.S. Geological Survey thereafter. Recorder removed June 3, 1975; manual measurements thereafter.

KING AND QUEEN COUNTY--Continued

373126076454101--Continued
PERIOD OF RECORD.--October 1974 to current year. Unpublished records available in March 1962 and June 1972.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 73.08 ft below land-surface datum, Apr. 25, 1975; lowest measured, 86.90 ft below land-surface datum, Nov. 4, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 4	86.90	JAN 26	86.62	FEB 15	85.59	MAY 18	84.70

373008076425601. Local number, 57J3.
LOCATION.--Lat 37°30'08", long 76°42'56", Hydrologic Unit 02080107, Gressitt observation well, near West Point. Owner: Chesapeake Corporation.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in to 200 ft, diameter 4 in from 200 to 760 ft, depth 760 ft, screened 741 to 756 ft.
DATUM.--Altitude of land-surface datum is 51 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.20 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 74 through the 1979 water year; by U.S. Geological Survey thereafter. Recorder removed June 10, 1976; manual measurements thereafter.
PERIOD OF RECORD.--November 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 109.90 ft below land-surface datum, Jan. 26, 1975; lowest measured, 122.00 ft below land-surface datum, Mar. 2, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 4	120.98	JAN 26	120.44	FEB 15	120.19	MAY 18	120.59

KING WILLIAM COUNTY

373226076481201. Local number, 56J2.
LOCATION.--Lat 37°32'26", long 76°48'12", Hydrologic Unit 02080106, in West Point, 0.1 mi west of State Highway 30. Owner: Chesapeake Corporation.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled withdrawal well, diameter 18 in to 300 ft, diameter 8 in from 300 to 600 ft, depth 600 ft, screened 390 to 400 ft, 550 to 570 ft, 580 to 600 ft.
DATUM.--Altitude of land-surface datum is 25 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.
REMARKS.--This well replaces previously published 56J1 which was discontinued April 1982.
PERIOD OF RECORD.--November 1982 to September 1983.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 141.48 ft below land-surface datum, Feb. 15, 1983; lowest measured, 152.85 ft below land-surface datum, May 18, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 4	147.37	JAN 26	141.52	FEB 15	141.48	MAY 18	152.85

373206076481201. Local number, 56J18.
LOCATION.--Lat 37°32'06", long 76°48'12", Hydrologic Unit 02080106, near State Route 33 at Chesapeake Corporation, northeast corner of 13th and A Streets in Brick pump house. Owner: Chesapeake Corporation of Virginia.
AQUIFER.--Sand and clay of Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused well, diameter 18 in to 180 ft, diameter 8 in from 165 ft to 446 ft, depth 446 ft, screened 210 to 240 ft, 380 to 390 ft, 405 to 445 ft.
DATUM.--Altitude of land-surface datum is 5 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.22 ft above land-surface datum.
REMARKS.--Water levels affected by local pumpage.
PERIOD OF RECORD.--March 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 111.86 ft below land-surface datum, Dec. 29, 1978; lowest measured, 173.08 ft below land-surface datum, Feb. 23, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 4	154.04	JAN 26	138.29	FEB 13	136.48	MAY 18	154.68

LOUDOUN COUNTY

391542077423801. Local number, 49Y1.

LOCATION.--Lat 39°15'42", long 77°42'38", Hydrologic Unit 02070008, near Harpers Ferry. Owner: American Telephone and Telegraph Company.

AQUIFER.--Bedrock of Precambrian or Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6.5 in. Prior to 1974, diameter reported as 8 in. Depth 516 ft, cased to 45 ft, open hole 45 to 516 ft.

DATUM.--Altitude of land-surface datum is 1,100 ft National Geodetic Vertical Datum of 1929. Prior to 1974, altitude reported as 940 ft above mean sea level. Measuring point: Top of casing, 1 ft above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 22. Recorder removed July 26, 1974; manual measurements thereafter.

PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 48.00 ft below land-surface datum, June 22, 1972; lowest measured, 61.70 ft below land-surface datum, Sept. 27, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	60.26	FEB 28	56.92	JUL 13	59.40
NOV 10	60.40	APR 13	53.94	AUG 23	60.15
JAN 4	60.43	MAY 25	56.10	SEP 27	61.70

390623077314201. Local number, 50W4C.

LOCATION.--Lat 39°06'23", long 77°31'42", Hydrologic Unit 02070008, east of Highway 7 on east side of town of Leesburg, under water tower. Owner: Town of Leesburg.

AQUIFER.--Slightly metamorphosed Balls Bluff formation of Triassic age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 535 ft, cased to 6 ft, open hole 6 to 535 ft.

DATUM.--Altitude of land-surface datum is 400 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum. Measuring point was land-surface datum for the following dates: Oct. 8, 1981, Nov. 18, 1981, and Mar. 23, 1982.

PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.96 ft below land-surface datum, Apr. 2, 1980; lowest measured, 48.97 ft below land-surface datum, Feb. 19, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	46.70	APR 28	35.73	SEP 29	44.58
FEB 25	42.46	JUL 25	37.65		

LOUISA COUNTY

380217078133701. Local number, 45N1.

LOCATION.--Lat 38°02'17", long 78°13'43", Hydrologic Unit 02080106, near Thelma, 3 mi southwest of Boswells Tavern on Tyler property near State Highway 640. Owner: Tyler.

AQUIFER.--Wissahickon formation of Late Precambrian (?) age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in, depth 56 ft, length of casing unknown.

DATUM.--Altitude of land-surface datum is 500 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 1.95 ft above land-surface datum. Measuring point changed from 3.10 ft above land-surface datum Mar. 14, 1973.

REMARKS.--Records furnished by the Virginia State Water Control Board.

PERIOD OF RECORD.--July 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.97 ft below land-surface datum, Apr. 30, 1973; lowest measured, 35.17 ft below land-surface datum, Dec. 2, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.13	29.30	30.00	29.92	29.70	28.33	26.25	22.66	22.10	23.10	25.29	27.57
10	28.30	29.45	30.24	29.81	29.48	27.87	25.75	22.43	22.36	23.40	25.70	27.89
15	28.39	29.60	30.30	29.65	29.30	27.60	25.25	22.02	22.40	23.65	26.13	28.29
20	28.69	29.67	30.10	29.87	-	27.31	24.54	21.99	22.70	24.05	26.40	28.56
25	28.80	29.90	30.20	29.72	28.78	27.07	23.59	21.99	22.78	24.42	26.80	28.91
EOM	29.09	30.00	29.90	29.69	28.70	26.58	23.24	21.91	23.00	24.81	27.22	29.18

WTR YR 1983 HIGHEST 21.78 MAY 30, 1983 LOWEST 30.30 DEC 13-15, 1982

LOUISA COUNTY--Continued

380043078111301. Local number, 45N4.
LOCATION.--Lat 38°00'45", long 78°11'14", Hydrologic Unit 02080106, near Thelma, 4 mi southeast of Boswells Tavern east of U.S. Highway 15. Owner: Virginia Department of Correction.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 200 ft, cased to 42 ft, open hole 42 to 200 ft.
DATUM.--Altitude of land-surface datum is 415 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.30 ft above land-surface datum.
PERIOD OF RECORD.--February 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.40 ft below land-surface datum, Apr. 28, 1980; lowest measured, 14.43 ft below land-surface datum, Aug. 26, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	13.49	JAN 28	12.22	APR 28	10.05	JUL 28	12.74
NOV 29	13.31	FEB 25	10.90	MAY 27	10.08	AUG 29	13.25
DEC 21	12.53	MAR 30	10.65	JUN 29	11.84	SEP 29	14.03

380231078132801. Local number, 45N5.
LOCATION.--Lat 38°02'31", long 78°13'28", Hydrologic Unit 02080106, near Thelma, 3 mi southwest of Boswells Tavern on Tyler property near State Highway 640. Owner: Tyler.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in, depth 14.15 ft, length of casing unknown.
DATUM.--Altitude of land-surface datum is 440 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.35 ft above land-surface datum.
PERIOD OF RECORD.--February 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.30 ft below land-surface datum, Mar. 27, 1979; lowest measured, 6.81 ft below land-surface datum, July 31, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	3.95	JAN 28	1.73	APR 28	1.45	JUL 28	5.65
NOV 29	.44	FEB 25	.85	MAY 27	1.29	AUG 29	6.11
DEC 22	1.30	MAR 30	1.35	JUN 29	2.64	SEP 29	6.43

380236078132301. Local number, 45N6.
LOCATION.--Lat 38°02'36", long 78°13'23", Hydrologic Unit 02080106, near Thelma, 3 mi southwest of Boswells Tavern on Tyler property near State Highway 640. Owner: Tyler.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in, depth 11.75 ft, length of casing unknown.
DATUM.--Altitude of land-surface datum is 440 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.20 ft above land-surface datum.
PERIOD OF RECORD.--February 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.06 ft below land-surface datum, July 31, 1978; lowest measured, 9.85 ft below land-surface datum, Sept. 28, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	7.43	JAN 28	6.96	APR 28	3.54	JUL 28	8.05
NOV 29	7.06	FEB 25	4.60	MAY 27	5.77	AUG 29	8.84
DEC 22	6.93	MAR 30	4.16	JUN 29	6.55	SEP 29	9.43

380131078001001. Local number, 46N1.
LOCATION.--Lat 38°01'31", long 78°00'10", Hydrologic Unit 02080106, in the town of Louisa. Owner: Town of Louisa.
AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 132 ft, length of casing unknown.
DATUM.--Altitude of land-surface datum is 455 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.6 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 56. Recorder removed Apr. 30, 1979; manual measurements thereafter.
PERIOD OF RECORD.--March 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.27 ft below land-surface datum, May 18, 1973; lowest measured, 34.78 ft below land-surface datum, Dec. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	32.74	MAR 14	32.83	JUL 11	30.60
NOV 10	32.68	APR 1	31.30	AUG 16	30.96
JAN 22	33.03	MAY 4	31.40	SEP 27	31.80

MONTGOMERY COUNTY

370812080261901. Local number, 27F2.
LOCATION.--Lat 37°08'12", long 80°26'19", Hydrologic Unit 05050001, in the town of Christiansburg. Owner: Town of Christiansburg.
AQUIFER.--Beekmantown formation of Early Ordovician age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in, depth 450 ft, length of casing unknown.
DATUM.--Altitude of land-surface datum is 1,970 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.60 ft below land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 19.
PERIOD OF RECORD.--May 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.50 ft below land-surface datum, Apr. 10-16, 23-25, 1983, water flowing over top of casing; lowest recorded, 7.30 ft below land-surface datum, Dec. 5, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.20	4.97	4.30	4.34	3.99	3.18	2.53	2.13	3.58	4.51	5.25	5.73
10	5.69	5.35	4.62	4.50	3.90	2.86	1.78	2.51	3.99	4.82	5.41	5.80
15	5.16	5.51	4.45	4.49	3.85	3.14	-	2.80	3.77	5.00	5.46	5.63
20	5.64	5.54	3.59	4.95	3.10	2.42	1.89	2.88	3.66	5.21	5.60	5.78
25	5.68	5.43	3.80	4.33	3.05	2.58	1.61	3.12	4.21	4.70	5.41	5.74
EOM	5.40	4.57	4.19	4.40	3.10	2.59	1.90	3.31	4.30	5.10	5.51	5.70

WTR YR 1983 HIGHEST *1.50 Apr. 10-16, 23-25, 1983 LOWEST 6.20 OCT 4, 5, 1982

* Water flowing over top of casing at elevation 1.50 ft.

NELSON COUNTY

374224078555601. Local number, 39K1.
LOCATION.--Lat 37°42'24", long 78°55'56", Hydrologic Unit 02080203, near Colleen. Owner: P. D. Payne.
AQUIFER.--Lovingston (or Marshall?) formation of Precambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 275 ft, length of casing unknown.
DATUM.--Altitude of land-surface datum is 770 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 6. Recorder removed June 26, 1974; manual measurements thereafter.
PERIOD OF RECORD.--October 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 27.08 ft below land-surface datum, June 29, 1973; lowest recorded, 35.66 ft below land-surface datum, Mar. 7, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 12	32.79	APR 5	32.66	JUL 15	31.73
NOV 12	32.44	MAY 24	31.48	AUG 26	32.27
JAN 7	32.86				

NEW KENT COUNTY

372428076561501. Local number, 55H1.
LOCATION.--Lat 37°24'28", long 76°56'15", Hydrologic Unit 02080206, Walkers Dam, near Walkers. Owner: City of Newport News.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in to 145 ft, diameter 4 in from 145 to 630 ft, depth 630 ft, screen (slotted casing) 252 to 257 ft, 339 to 344 ft, 439 to 444 ft, 615 to 625 ft.
DATUM.--Altitude of land-surface datum is 10 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.8 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 17. Recorder removed Apr. 5, 1979; manual measurements thereafter.
PERIOD OF RECORD.--March 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 30.24 ft below land-surface datum, Apr. 10, 1969; lowest measured, 57.43 ft below land-surface datum, Aug. 30, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 14	52.57	DEC 7	53.10	MAR 17	53.28	AUG 22	53.74
NOV 5	52.91	JAN 23	53.72	JUL 22	53.44		

CITY OF NORFOLK

365223076122101. Local number, 61C1.

LOCATION.--Lat 36°52'23", long 76°12'21", Hydrologic Unit 02080108, Moore's Bridge Filter Plant, Norfolk. Owner: City of Norfolk.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in, depth 970 ft, screened 900 to 960 ft.

DATUM.--Altitude of land-surface datum is 10.80 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.15 ft above land-surface datum. Measuring point changed from 4.0 ft above land-surface datum Dec. 15, 1979.

REMARKS.--U.S. Geological Survey test well 1. Water level affected by pumping and recharge operations in nearby wells May 18, 1971, to Nov. 5, 1973. Recorder removed Dec. 15, 1979; manual measurements thereafter.

PERIOD OF RECORD.--January 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.70 ft below land-surface datum, Feb. 17, 1968; lowest measured, 50.04 ft below land-surface datum, May 12, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	49.57	JAN 28	49.44	MAR 10	49.15	JUL 12	49.50
DEC 17	49.44	FEB 15	49.21	MAY 13	49.40	SEP 2	49.55

ORANGE COUNTY

381002078094201. Local number, 45P1.

LOCATION.--Lat 38°10'02", long 78°09'42", Hydrologic Unit 02080106. Gordonsville. Owner: M. L. Johnson.

AQUIFER.--Phyllite of Evington group of Cambrian or Precambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 98 ft, length of casing unknown.

DATUM.--Altitude of land-surface datum is 480 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.3 ft above land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 30.

PERIOD OF RECORD.--February 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.83 ft below land-surface datum, Apr. 10, 1973; lowest recorded, 35.90 ft below land-surface datum, Jan. 31, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.14	29.92	28.69	26.30	25.17	21.69	-	16.50	19.70	23.40	26.30	28.91
10	28.40	30.30	28.86	26.40	24.40	19.70	-	17.98	20.90	23.97	26.70	29.30
15	28.54	30.40	29.10	26.26	23.79	19.47	15.38	18.70	21.30	24.30	27.19	29.73
20	29.10	30.53	26.55	26.80	22.19	18.80	15.00	17.61	21.98	24.84	27.50	29.98
25	29.31	30.81	26.20	26.57	21.33	-	14.76	17.63	22.47	25.27	-	30.53
EOM	29.59	30.30	26.17	26.13	21.53	-	15.30	18.63	23.12	25.80	28.49	30.66

WTR YR 1983 HIGHEST 14.55 APR 19, 1983 LOWEST 30.84 NOV 27, 28, 1982

PRINCE WILLIAM COUNTY

384931077420301. Local number, 49U1.

LOCATION.--Lat 38°49'30", long 77°42'08", Hydrologic Unit 02070010, north of State Highway 55 near Thoroughfare Gap, 3.7 mi west of Haymarket. Owner: Virginia Department of Highways and Transportation.

AQUIFER.--Shale and sandstone of Newark group of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in, depth 345 ft, cased to 20 ft, open hole 20 to 345 ft.

DATUM.--Altitude of land-surface datum is 383 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Recorder removed Feb. 9, 1980; manual measurements thereafter.

PERIOD OF RECORD.--June 1969 to current year. Unpublished records available October 1968 to May 1969.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.59 ft below land-surface datum, Mar. 19, 1975; lowest recorded, 10.22 ft below land-surface datum, Nov. 8, 9, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	7.99	JAN 20	6.16	MAY 23	3.78	AUG 17	7.91
DEC 7	5.76	MAR 16	4.17	JUL 11	6.67		

385607077381101. Local number, 49V1.

LOCATION.--Lat 38°56'07", long 77°38'11", Hydrologic Unit 02070010, north of Haymarket at intersection of State Highways 600 and 615. Owner: J. H. Hutchison.

AQUIFER.--Shale and sandstone of Newark group of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in, depth 165 ft, cased to 10 ft, open hole 10 to 165 ft.

DATUM.--Altitude of land-surface datum is 420 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1 ft above land-surface datum. Readings from 1979 to 1981 should be 0.7 ft lower than previously published.

PERIOD OF RECORD.--November 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.85 ft below land-surface datum, Oct. 12, 1979; lowest recorded, 12.28 ft below land-surface datum, July 12, 13, 1970.

PRINCE WILLIAM COUNTY--Continued

385607077381101--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.09	10.17	8.69	9.56	8.72	8.43	8.31	9.10	9.42	9.74	11.26	11.87
10	11.12	9.59	9.07	9.62	8.85	7.71	7.94	9.56	8.65	10.13	11.43	12.19
15	10.94	9.75	9.28	9.09	8.88	8.37	7.72	9.76	9.30	10.51	11.20	11.88
20	11.12	9.89	8.50	9.58	8.28	8.16	8.02	8.53	9.73	10.80	11.38	11.91
25	11.10	10.10	8.96	9.50	7.76	8.40	7.81	8.35	9.35	10.84	11.57	11.71
EOM	10.53	9.44	9.34	9.40	7.92	8.23	8.28	9.00	9.37	11.10	11.84	11.76

WTR YR 1983 HIGHEST 7.28 APR 16, 1983 LOWEST 12.23 SEP 9, 1983

383423077245901. Local number, 51S7.
LOCATION.--Lat 38°34'23", long 77°24'59", Hydrologic Unit 02070011, 0.7 mi southeast of Belfair Crossroads and 700 ft north of State Highway 619. Owner: National Park Service.
AQUIFER.--Wissahickan formation of Paleozoic age.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in, depth 490 ft, cased to 50 ft, open hole 50 to 490 ft.
DATUM.--Altitude of land-surface datum is 295 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.
PERIOD OF RECORD.--December 1977 to current year. Unpublished records available September 1973 to November 1975.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.14 ft below land-surface datum, Apr. 20, 1983; lowest measured, 11.51 ft below land-surface datum, Sept. 28, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	8.88	JAN 27	6.31	APR 20	0.14	SEP 28	11.51
DEC 21	6.48	FEB 15	5.83	JUN 30	4.68		

PULASKI COUNTY

370516080411501. Local number, 25E2.
LOCATION.--Lat 37°05'16", long 80°41'15", Hydrologic Unit 05050001, in the town of Dublin. Owner: Town of Dublin.
AQUIFER.--Conococheague formation of Late Cambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in, depth 370 ft, length of casing unknown.
DATUM.--Altitude of land-surface datum is 2,170 ft National Geodetic Vertical Datum of 1929. Measuring point: of casing, at land-surface datum. Measuring point changed from top of recorder shelf, 2.23 ft above land-surface datum July 21, 1974.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 59. Recorder removed July 21, 1974; manual measurements thereafter.
PERIOD OF RECORD.--April 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.00 ft below land-surface datum, Mar. 18, 1973; lowest measured, 82.50 ft below land-surface datum, Oct. 5, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 5	82.50	JAN 4	78.80	APR 13	65.22	JUL 12	80.55
NOV 9	81.65	FEB 23	71.20	MAY 24	74.62	AUG 23	79.85

CITY OF ROANOKE

371653079552101. Local number, 31G1.
LOCATION.--Lat 37°16'53", long 79°55'21", Hydrologic Unit 03010101, in the city of Roanoke. Owner: Nelson-Roanoke Corporation.
AQUIFER.--Rome formation of Cambrian age. Prior to 1974, reported as Elbrook formation.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 48 ft, length of casing unknown.
DATUM.--Altitude of land-surface datum is 930 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.9 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 8. Recorder removed July 21, 1974; manual measurements thereafter.
PERIOD OF RECORD.--August 1966 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.97 ft below land-surface datum, June 22, 1972; lowest measured, 23.15 ft below land-surface datum, May 23, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	17.99	JAN 3	17.86	APR 12	15.71	JUL 11	17.98
NOV 8	17.78	FEB 22	17.11	MAY 23	17.46	AUG 22	18.01

ROCKBRIDGE COUNTY

373758079271601. Local number, 35K1.
LOCATION.--Lat 37°37'58", long 79°27'16", Hydrologic Unit 02080202, in the town of Glasgow. Owner: Town of Glasgow.
AQUIFER.--Rome formation of Cambrian age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in, depth 700 ft, cased to 101 ft, open hole from 101 to 700 ft.
DATUM.--Altitude of land-surface datum is 745 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 63.
PERIOD OF RECORD.--June 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.92 ft below land-surface datum, July 8, 1972; lowest recorded, 29.13 ft below land-surface datum, Dec. 13, 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	27.40	27.70	27.12	25.74	24.30	22.99	19.90	19.02	22.49	23.20	25.73	26.89
10	27.52	27.78	27.14	25.87	24.02	22.64	19.18	20.00	22.99	23.42	25.96	27.10
15	27.56	27.94	26.89	25.90	23.99	22.60	17.81	20.69	23.22	24.69	26.17	27.24
20	27.74	28.02	25.53	26.20	23.27	21.87	17.90	21.31	23.59	24.99	26.34	27.39
25	27.83	28.18	25.57	25.73	22.69	21.70	17.63	21.50	23.83	25.20	26.52	27.50
EOM	27.68	27.80	25.71	25.36	22.70	21.18	18.00	22.02	24.10	25.48	26.71	27.61

WTR YR 1983 HIGHEST 17.35 APR 17, 1983 LOWEST 28.20 NOV 27,28, 1982

ROCKINGHAM COUNTY

382150078424001. Local number, 41Q1.
LOCATION.--Lat 38°21'50", long 78°42'40", Hydrologic Unit 02070005, at Virginia Department of Highways and Transportation garage near McGaheysville. Owner: U.S. Geological Survey.
AQUIFER.--Conococheague limestone of Late Cambrian age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 1/4 in, depth 310 ft, cased to 131 ft, open hole 131 to 310 ft.
DATUM.--Altitude of land-surface datum is 1,105 ft National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.50 ft above land-surface datum.
PERIOD OF RECORD.--August 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.38 ft below land-surface datum, Dec. 26, 1972; lowest recorded, 87.18 ft below land-surface datum, Oct. 26, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	73.32	76.01	76.07	71.52	72.79	68.43	65.68	64.46	64.70	66.09	68.04	71.10
10	73.87	76.11	75.60	71.48	71.81	68.14	65.54	64.81	65.09	66.35	68.42	71.72
15	74.39	76.33	75.27	71.69	71.07	68.03	64.41	65.04	65.41	66.62	68.86	72.28
20	74.90	76.60	75.11	72.14	70.34	65.85	64.39	64.53	65.55	66.93	69.32	72.86
25	75.36	76.94	72.94	72.55	69.14	65.88	64.07	64.18	65.60	67.25	69.86	73.48
EOM	75.75	76.98	71.94	73.00	68.76	66.10	64.08	64.54	65.88	67.67	70.52	74.04

WTR YR 1983 HIGHEST 63.81 APR 27, 1983 LOWEST 77.12 NOV 28, 1982

SOUTHAMPTON COUNTY

364109077230701. Local number, 51B3.
LOCATION.--Lat 36°41'09", long 77°23'07", Hydrologic Unit 03010201, 150 ft east of the intersection of State Highway 615 and U.S. 58, near Adams Grove. Owner: U.S. Geological Survey.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drill observation water well, diameter 4 in, depth 253 ft, screened 165 to 175 ft, open hole from 175 to 253 ft.
DATUM.--Altitude of land-surface datum is 126 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 3.20 ft above land-surface datum.
PERIOD OF RECORD.--July 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 54.21 ft below land-surface datum, Apr. 30, 1978; lowest recorded, 60.03 ft below land-surface datum, Oct. 24, 25, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	57.85	57.29	56.76	55.98	55.71	55.11	55.04	55.01	55.29	56.04	57.46	58.51
10	57.89	57.26	56.59	55.84	55.61	54.94	55.04	55.15	55.42	56.09	57.65	58.74
15	57.73	57.17	56.27	55.81	55.28	55.02	55.06	55.33	55.52	56.32	57.91	58.82
20	57.63	57.05	56.07	55.87	55.23	55.02	54.71	55.46	55.81	56.60	58.18	58.90
25	57.53	56.96	56.11	55.77	55.24	55.03	54.74	55.31	55.77	56.79	58.29	58.78
EOM	57.42	56.82	56.05	55.73	55.30	55.03	54.92	55.37	55.93	57.15	58.44	58.70

WTR YR 1983 HIGHEST 54.65 APR 19, 1983 LOWEST 58.90 SEP 20, 21, 1983

SOUTHAMPTON COUNTY--Continued

364706077072301. Local number, 54C1.
LOCATION.--Lat 36°47'06", long 77°07'23", Hydrologic Unit 03010201, in the town of Sebrell. Owner: Norfolk and Western Railway.
AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in, depth 344 ft, screen depth unknown.
DATUM.--Altitude of land-surface datum is 58.4 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.
PERIOD OF RECORD.--1907, July 1938, April 1940 to December 1946, September 1948 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.00 ft below land-surface datum, 1907; lowest measured, 97.48 ft below land-surface datum, Oct. 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	95.44	FEB 15	93.97	MAY 12	93.97
NOV 12	95.30	MAR 11	93.59	JUN 10	93.82
DEC 10	95.00	APR 12	93.80	AUG 4	94.64
JAN 11	94.52				

CITY OF SUFFOLK

363834076382301. Local number, 57B8.
LOCATION.--Lat 36°38'27", long 76°38'05", Hydrologic Unit 03010205, 0.3-mi southwest of State Highway 664 and 0.8 mi east of U.S. Highway 13. Owner: Soren F. Andresen.
AQUIFER.--Sand of Chesapeake group.
WELL CHARACTERISTICS.--Drilled flowing water well, diameter 2 in, depth 65 ft, screened 50 to 65 ft.
DATUM.--Altitude of land-surface datum is 45 ft National Geodetic Vertical Datum of 1929. Measuring point: At land-surface datum.
REMARKS.--All water levels from Apr. 13 to Sept. 28, 1978, should be 1.20 ft higher than previously published.
PERIOD OF RECORD.--November 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.51 ft above land-surface datum, Mar. 9, 1979; lowest measured, at land-surface datum, Sept. 26, 1980.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	5.75	MAY 13	5.71	AUG 8	1.84
DEC 17	6.46	JUN 3	4.27	SEP 2	2.40
FEB 7	6.48	JUL 12	4.72	7	1.18
MAY 3	4.88				

NOTE.--Flowing well, readings given are above land-surface datum.

363810076381001. Local number, 57B9.
LOCATION.--Lat 36°38'36", long 76°38'10", Hydrologic Unit 03010205, 0.2 mi southwest of State Highway 664, 0.7 mi southeast of U.S. Highway 13, and 6.7 mi southwest of Suffolk. Owner: Soren Andresen.
AQUIFER.--Sand of Chesapeake group.
WELL CHARACTERISTICS.--Drilled flowing unused water well, diameter 1.25 in, depth 85 ft, screened 70 to 85 ft.
DATUM.--Altitude of land-surface datum is 45 ft National Geodetic Vertical Datum of 1929. Measuring point: At land-surface datum.
REMARKS.--All water levels from Apr. 13 to Sept. 28, 1978, should be 0.78 ft higher than previously published.
PERIOD OF RECORD.--November 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.85 ft above land-surface datum, Feb. 7, 1983; lowest measured, 0.22 ft below land-surface datum, Sept. 26, 1980.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	4.84	MAY 13	4.30	AUG 8	1.47
DEC 17	5.45	JUN 3	4.10	SEP 2	1.35
FEB 7	5.85	JUL 12	2.26	7	.74
MAY 3	4.54				

NOTE.--Flowing well, readings given are above land-surface datum.

363928076332901. Local number, 58B13.
LOCATION.--Lat 36°39'28", long 76°33'29", Hydrologic Unit 03010205, 4 mi south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in, depth 15 ft.
DATUM.--Altitude of land-surface datum is 40 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 1.90 ft above land-surface datum.
PERIOD OF RECORD.--August 1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.95 ft below land-surface datum, May 25, 1979; lowest recorded, 13.44 ft below land-surface datum, Jan. 23-26, 1981.

CITY OF SUFFOLK--Continued

363928076332901--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.35	8.32	8.02	5.99	7.26	5.55	6.21	6.37	7.89	8.52	9.93	10.83
10	9.49	8.23	7.81	6.18	6.64	5.71	5.78	6.84	7.81	8.89	10.10	10.89
15	9.46	8.21	6.74	6.52	3.98	6.25	5.81	7.22	7.94	9.24	10.28	10.95
20	9.28	7.65	6.11	7.03	5.22	5.31	5.51	7.62	8.30	9.53	10.38	11.01
25	9.34	7.88	6.75	7.19	5.51	5.85	5.28	7.36	7.75	9.45	10.54	10.87
EOM	8.29	8.00	6.97	7.18	5.74	6.29	5.97	7.67	8.23	9.71	10.73	10.66

WTR YR 1983 HIGHEST 3.98 FEB 15, 1983 LOWEST 11.02 SEP 21-23, 1983

363921076331601. Local number, 58B14.
LOCATION.--Lat 36°39'21", long 76°33'16", Hydrologic Unit 03010205, 4 mi south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in, depth 9.30 ft.
DATUM.--Altitude of land-surface datum is 30 ft National Geodetic Vertical Datum of 1929. Measuring point: Inside edge of casing, 2.5 ft above land-surface datum. Prior to 1978, measuring point reported as 2.7 ft above land-surface datum.
PERIOD OF RECORD.--May 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.30 ft below land-surface datum, Jan. 26, 1978; lowest measured, water level below bottom of casing, Sept. 29, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 13	1.22	JUN 3	1.39	AUG 8	3.32
MAY 4	1.74	JUL 12	3.40	SEP 7	4.26

363925076331701. Local number, 58B15.
LOCATION.--Lat 36°39'25", long 76°33'43", Hydrologic Unit 03010205, 4 mi south of Suffolk off State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Pleistocene age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in, depth 6.6 ft, sounded Feb. 3, 1982.
DATUM.--Altitude of land-surface datum is 35 ft National Geodetic Vertical Datum of 1929. Measuring point: Inside edge of casing, 1.4 ft above land-surface datum.
PERIOD OF RECORD.--May 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.98 ft below land-surface datum, Jan. 26, 1978; lowest measured, below bottom of well at times each year.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 13	2.13	JUN 3	3.48	AUG 8	5.29
MAY 4	2.79	JUL 12	4.77	SEP 7	6.44

363902076331901. Local number, 58B48.
LOCATION.--Lat 36°39'02", long 76°33'19", Hydrologic Unit 03010205, 4 mi south of Suffolk and east of State Highway 642. Owner: Melvin Brinkley.
AQUIFER.--Sand of Quaternary age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in, depth 7 ft.
DATUM.--Altitude of land-surface datum is 35 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of inside edge of casing, 1.40 ft above land-surface datum.
PERIOD OF RECORD.--May 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.20 ft below land-surface datum, May 31, 1978; lowest measured, below bottom of well Sept. 29, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR 13	1.59	JUN 3	2.09	AUG 8	4.73
MAY 4	4.59	JUL 12	3.56	SEP 7	5.18

364301076314801. Local number, 58B114.
LOCATION.--Lat 36°43'30", long 76°31'48", Hydrologic Unit 03010205, at the intersection of Jericho Lane and Jericho Ditch in the Great Dismal Swamp. Owner: U.S. Fish and Wildlife.
AQUIFER.--Sand of Late Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in to 61.8 ft, 2 in from 61.8 to 569.9 ft, depth 569.9 ft, screened 559.9 to 569.9 ft.
DATUM.--Altitude of land-surface datum is 25 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.7 ft above land-surface datum.
PERIOD OF RECORD.--May 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 76.29 ft below land-surface datum, May 21, 1976; lowest measured, 98.02 ft below land-surface datum, July 16, 1981.

CITY OF SUFFOLK--Continued

364301076314801--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB 7	88.24	JUN 3	88.33	AUG 24	89.30
MAY 4	89.95	JUL 27	88.79	SEP 9	89.24

364330076345101. Local number, 58B235.

LOCATION.--Lat 36°43'30", long 76°34'51", Hydrologic Unit 02080208, in the Planters Plant in the city of Suffolk. Owner: Planters Peanut Company.

AQUIFER.--Sand of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in to 254 ft, 8 in from 254 to 422 ft, 6 in from 422 to 570.0 ft, depth 570 ft, screened 530 to 561.6 ft.

DATUM.--Altitude of land-surface datum is 53 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.50 ft above land-surface datum.

PERIOD OF RECORD.--November 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 125.25 ft below land-surface datum, Apr. 2, 1980; lowest measured, 142.30 ft below land-surface datum, July 2, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	127.22	DEC 17	128.00	FEB 11	127.70	MAY 13	127.84

364512076343702. Local number, 58C53.

LOCATION.--Lat 36°45'12", long 76°34'37", Hydrologic Unit 02080208, 750 ft northeast of Virginia Department of Highways and Transportation fuel storage area and 2,000 ft east of State Highway 460. Owner: Virginia State Water Control Board.

AQUIFER.--Sand of undifferentiated cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in to 294 ft, diameter 2 in from 294 to 881 ft, depth 896 ft, screened 881 to 896 ft.

DATUM.--Altitude of land-surface datum is 10 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.40 ft above land-surface datum.

PERIOD OF RECORD.--February to September 1983.

EXTREMES FOR CURRENT YEAR.--Highest water level recorded during period February to September, 69.41 ft below land-surface datum, Apr. 24; lowest recorded, 74.09 ft below land-surface dauum, Sept. 30.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, FEBRUARY TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5						70.59	70.26	70.14	70.34	70.43	70.82	71.26
10					70.63	70.59	70.12	70.35	70.53	70.62	70.91	71.55
15					70.52	70.33	70.34	70.42	70.48	70.70	71.02	71.71
20					70.53	70.31	70.18	70.36	70.55	70.83	70.97	72.49
25					70.51	70.34	70.14	70.35	70.39	70.68	71.16	73.31
EOM					70.65	70.31	70.31	70.29	70.47	70.79	70.96	74.09

FEBRUARY TO SEPTEMBER 1983 HIGHEST 69.41 APR 24 LOWEST 74.09 SEP 30

364512076343705. Local number, 58C56.

LOCATION.--Lat 36°45'12", long 76°34'37", Hydrologic Unit 02080208, 750 ft northeast of Virginia Department of Highways and Transportation fuel storage area and 2,000 ft east of State Highway 460. Owner: Virginia State Water Control Board.

AQUIFER.--Sand of undifferentiated cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in to 557 ft, depth 567 ft, screened from 557 to 567 ft.

DATUM.--Altitude of land-surface datum is 10 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.40 ft above land-surface datum.

PERIOD OF RECORD.--February to September 1983.

EXTREMES FOR CURRENT YEAR.--Highest water level recorded during period February to September, 78.61 ft below land-surface datum, Apr. 16; lowest recorded, 83.25 ft below land-surface datum, Sept. 30.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, FEBRUARY TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5					-	79.88	79.75	79.11	79.88	80.14	80.67	81.25
10					-	79.73	79.52	79.61	80.47	80.67	81.04	81.58
15					79.68	79.76	79.51	79.55	80.03	81.03	80.98	81.50
20					79.69	79.76	79.59	79.65	80.34	80.70	81.32	81.89
25					79.78	79.75	79.44	79.72	79.91	80.31	81.47	82.67
EOM					79.87	79.75	79.50	79.91	79.97	80.72	81.47	83.25

FEBRUARY TO SEPTEMBER 1983 HIGHEST 78.61 APR 16 LOWEST 83.25 SEP 30

SURRY COUNTY

370408076460101. Local number, 56E1.
LOCATION.--Lat 37°04'08", long 76°40'01", Hydrologic Unit 03010202, on State Highway 617, 3.2 mi southwest of Bacons Castle. Owner: Buster E. Cox.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 18 in to 360 ft, 8 in from 333.5 to 705 ft, depth 705 ft, screened 401 to 411 ft, 431 to 441 ft, 463 to 473 ft, 495 to 505 ft, 540 to 555 ft, 700 to 705 ft.
DATUM.--Altitude of land-surface datum is 93 ft National Geodetic Vertical Datum of 1929. Measuring point: Top edge of recorder shelf, 3.6 ft above land-surface datum.
PERIOD OF RECORD.--March 1942, April 1969 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 73.52 ft below land-surface datum, Mar. 10, 1942; lowest recorded, 148.52 ft below land-surface datum, Sept. 24, 25, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	148.29	148.12	-	147.78	147.47	147.02	146.84	146.76	146.78	147.09	147.78	148.24
10	148.28	148.21	-	147.69	147.36	146.85	146.71	146.90	146.85	147.23	147.84	148.39
15	148.08	148.08	-	147.58	147.16	146.88	146.79	146.82	146.87	147.36	147.93	148.42
20	148.29	148.08	147.71	147.68	147.23	146.75	146.65	146.88	146.96	147.44	147.97	148.50
25	148.17	148.10	147.82	147.55	147.07	146.89	146.61	146.80	146.91	147.53	148.16	148.52
EOM	148.13	147.97	147.83	147.58	147.14	146.83	146.77	146.74	147.04	147.68	148.18	148.49

WTR YR 1983 HIGHEST 146.44 APR 24, 1983 LOWEST 148.52 SEP 24, 25, 1983

WESTMORELAND COUNTY

381110076550501. Local number, 55P5.
LOCATION.--Lat 38°11'10", long 76°55'05", Hydrologic Unit 02070011, behind craft shop at George Washington birthplace. Owner: National Park Service.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in, depth 471 ft, screened 451 to 466 ft.
DATUM.--Altitude of land-surface datum is 24 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder shelf, 3.0 ft above land-surface datum.
PERIOD OF RECORD.--June 1974 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.05 ft below land-surface datum, June 24, 1974; lowest recorded, 37.65 ft below land-surface datum, Sept. 20, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-	-	35.85	36.07	36.26	35.82	35.78	35.95	35.87	36.19	37.36	37.36
10	-	-	36.06	35.81	35.98	35.30	35.34	36.10	35.89	36.47	37.20	37.45
15	-	-	35.90	35.81	35.75	35.71	35.55	35.91	36.11	36.86	36.97	37.32
20	-	-	35.47	36.35	35.69	35.38	35.83	35.89	35.95	36.98	37.09	37.65
25	-	36.10	35.98	35.93	35.52	35.82	35.69	35.81	36.26	36.80	37.41	37.59
EOM	-	35.99	36.07	35.71	35.75	35.84	35.81	35.66	36.17	37.17	37.28	37.10

WTR YR 1983 HIGHEST 35.30 MAR 10, 1983 LOWEST 37.65 SEP 20, 1983

381132076551001. Local number, 55P9.
LOCATION.--Lat 38°11'32", long 76°55'10", Hydrologic Unit 02080104, 0.6 mi north of the end of State Highway 204, off State Highway 3 at George Washington Birthplace National Monument. Owner: National Park Service.
AQUIFER.--Sand of Quaternary age.
WELL CHARACTERISTICS.--Dug unused water well, diameter 36 in, depth 22.6 ft.
DATUM.--Altitude of land-surface datum is 17 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of concrete lip on casing, 1.65 ft above land-surface datum.
PERIOD OF RECORD.--July 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.11 ft below land-surface datum, Oct. 11, 1979; lowest measured, 11.38 ft below land-surface datum, Dec. 1, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 23	9.99	FEB 3	0.63	FEB 16	0.39	MAY 18	1.18

380538076490801. Local number, 56N1.
LOCATION.--Lat 38°05'38", long 76°49'08", Hydrologic Unit 02080104, at Washington and Lee School near Montross. Owner: Westmoreland County Public Schools.
AQUIFER.--Sand of undifferentiated Cretaceous age.
WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in to 189 ft, 2 in from 189 to 641 ft, depth 641 ft, screened 608 to 628 ft.
DATUM.--Altitude of land-surface datum is 149 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.2 ft above land-surface datum. Top of casing previously reported as 1 ft.
REMARKS.--Records furnished by the Virginia State Water Control Board as observation well 16. Recorder removed Mar. 31, 1979; manual measurements thereafter.
PERIOD OF RECORD.--August 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 133.47 ft below land-surface datum, Aug. 28, 1967; lowest measured, 157.20 ft below land-surface datum, Jan. 28, 1980.

WESTMORELAND COUNTY--Continued

380538076490801--Continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	153.58	DEC 15	153.31	APR 27	152.44	JUL 29	154.53

YORK COUNTY

371916076375901. Local number, 57G2.

LOCATION.--Lat 37°19'16", long 76°37'59", Hydrologic Unit 02080107, at Building 3101, Camp Peary, Williamsburg. Owner: Camp Peary Naval Reservation.

AQUIFER.--Sand and gravel of undifferentiated Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused well, diameter 10 in to 352 ft, diameter 8 in from 352 to 387 ft, depth 387 ft.

DATUM.--Altitude of land-surface datum is 15 ft National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.20 ft above land-surface datum. Prior to May 1981, measuring point at land-surface datum.

REMARKS.--Records furnished by the Virginia State Water Control Board from January 1968 to September 1975.

PERIOD OF RECORD.--January 1968 to September 1975, May 1981 to current year. Unpublished record available January to August 1976.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 43.09 ft below land-surface datum, Mar. 7, 1968; lowest recorded, 83.63 ft below land-surface datum, Sept. 24, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
LOWEST VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	80.47	81.00	79.87	78.41	77.64	76.51	76.79	76.82	77.33	78.88	80.93	82.88
10	79.77	80.97	79.57	77.97	77.19	75.89	76.49	77.10	77.52	79.34	81.16	83.23
15	80.39	80.73	79.38	77.92	76.61	76.50	76.97	77.00	77.65	79.59	81.05	82.82
20	80.78	80.14	78.43	78.13	76.38	76.39	77.26	77.13	77.92	79.81	81.34	83.56
25	80.06	80.76	78.96	77.95	76.20	76.50	76.77	77.08	78.28	79.98	81.73	83.60
EOM	81.07	80.32	78.78	77.44	76.61	77.05	77.07	76.94	78.24	80.73	82.20	82.93

WTR YR 1983 HIGHEST 74.83 MAR 1, 1983 LOWEST 83.63 SEP 24, 1983

SCOTT COUNTY

365012082355101 (10C1, Chimney Rock Fork Flowing Well near Ka, VA).--Located on east side of unimproved dirt road on right bank of Chimney Rock Fork, 0.3 mi upstream from Stony Creek, 2.0 mi northeast of Ka, and 4.3 mi north of Fort Blackmore on State Highway 66, Fort Blackmore Quadrangle. Flowing well, geologic unit unknown. Diameter of casing 6 in, depth unknown. Altitude of land-surface datum is 1,780 ft National Geodetic Vertical Datum. Record available for August 1983.

WATER QUALITY DATA, AUGUST 1983

DATE	TIME	FLOW RATE, INSTANTANEOUS (GPM)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
AUG 17...	1000	5.2	540	8.1	12.0	22	0	6.5	1.5

DATE	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	IRON, DISSOLVED (UG/L AS FE)
AUG 17...	90	1.5	110	3.3	80	.40	8.8	258	27

CITY OF SUFFOLK

363303076330201 (58A69).--Located 0.5 mi east of State Highway 604 at Virginia-North Carolina State line. Owner: Virginia State Water Control Board. Corapeake Quadrangle. Drilled observation well in Upper Potomac aquifer, geologic unit 211 CRCSU. Diameter 4 in, depth 535 ft, length of casing 467 ft. Altitude of land-surface datum is 40 ft National Geodetic Vertical Datum of 1929. Sample collected from discharge line at well head. Reported pumping rate of 3 gal/min. Record available for September 1983.

WATER QUALITY DATA, SEPTEMBER 1983

DATE	TIME	DEPTH OF WELL, TOTAL (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
SEP											
02-02	1600	535	1200	1240	8.5	20.5	8.1	1.4	9	1.4	1.2

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
SEP											
02-02	330	10	610	19	27	6.0	12	715	773	.040	<.10

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
SEP											
02-02	.60	.180	.190	50	5	4	200	88	1	<1	20

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP											
02-02	10	4	2	9	6	930	71	2	1	20	2

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)
SEP											
02-02	.1	<.1	2	2	<1	<1	<1	<1	20	6	4.0

< Actual value is known to be less than the value shown.

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October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons